



DEVELOPING TEXTBOOK THINKING

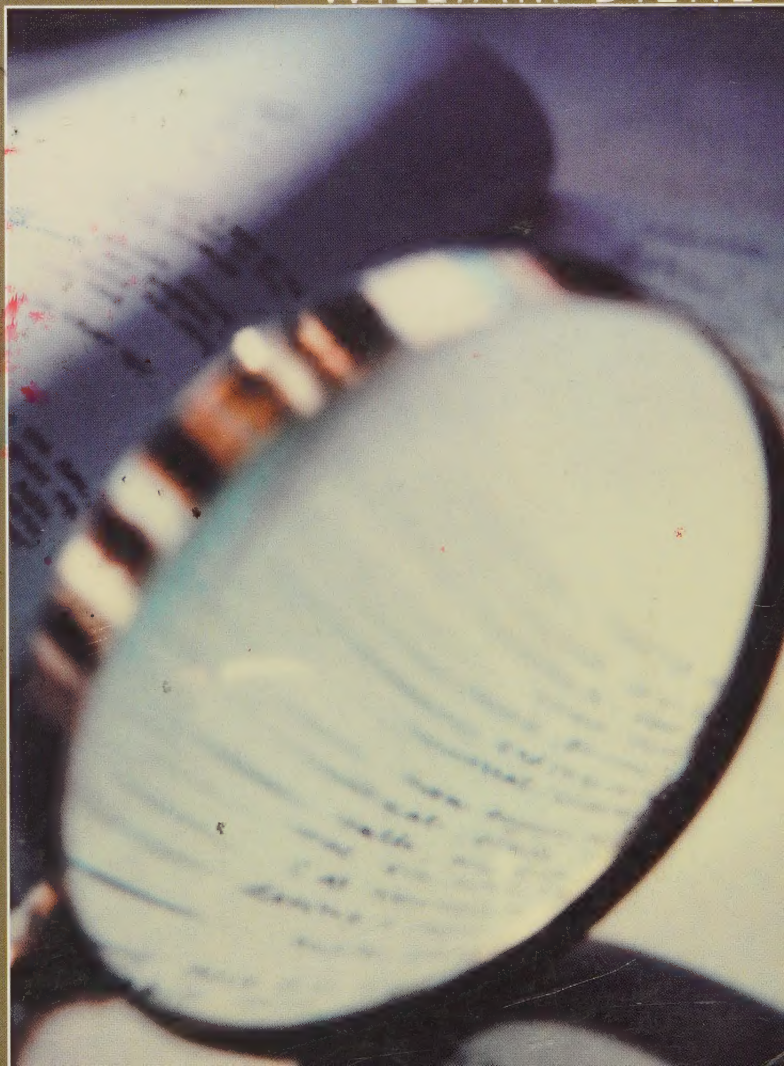
SHERRIE L. NIST
WILLIAM DIEHL

REVISED 2001
EDITION FOR MONMOUTH UNIVERSITY

With Selected Material
prepared by

MARY LEE BASS

Director of the Reading Center and
Instructional Support Services



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by Sherrie L. Nist and William Diehl
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by Sherrie L. Nist and William Diehl
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Mary Lee Bass, 2001



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PREFACE

To the Instructor

In this second edition of *Developing Textbook Thinking (DTT)*, we have maintained our basic philosophy that in order for students to be successful in college, they need a variety of learning and study strategies. As with the first edition, we assume that the students who use this text have learned to read; *Developing Textbook Thinking* will teach them how to *read to learn*. To achieve this goal, *DTT* takes students through a progression of strategies, each building on the other. The underlying premise of *Developing Textbook Thinking* is that what students do before and after reading is as important as reading itself. Not only does the overall study system presented here encompass this three-pronged philosophy, but most strategies progress in stages that build upon one another. Another important aspect of the strategies presented in the second edition is the strong emphasis placed on rehearsal. Every strategy is formatted to enable students to test themselves on important information, thus improving metacognitive abilities.

Although the basic philosophy has remained intact, there have been numerous changes in the content of the text. These changes were prompted as we received feedback from several different sources. First, students who used the first edition of *Developing Textbook Thinking* provided valuable comments about the strategies they found most helpful. Second, the reviewers—instructors who work with students across the country from a variety of college settings—suggested changes to meet the needs of diversified populations. Finally, current learning theory and research on study strategies enabled us to make the ideas in this text the most current in the college reading market. The text is based on solid research and theory, transformed into a practical and systematic learning system.

Part I, Understanding College Reading and Studying Demands, has been expanded to include complete chapters on *motivation* (Chapter 2), *time management* (Chapter 3), and a chapter titled “Tricks of the Trade” (Chapter 4) that includes miscellaneous hints helpful to college students. Chapter 5 discusses *textbook characteristics* and the student’s *reading rate*, addressing the ideas of both flexibility and efficiency in studying.

In Part II, Developing College Reading and Studying Strategies, we have traded in the tedious and time-consuming SQ3R method used in the first edition for a more streamlined and up-to-date studying system. This system, titled PROR (Preread, Read, Organize, and Review), has built-in metacognitive and self-testing elements that students have found more efficient and effective than SQ3R. We have taken the strongest elements of SQ3R and combined them with the latest research and theories on learning to devise a powerful studying system.

Part III, Expanding College Reading and Studying Strategies, now includes more comprehensive information on taking lecture notes in a variety of classes and in preparing for examinations. An important addition to this section is *PORPE* (*Predict, Organize, Rehearse, Practice, and Evaluate*), a structured strategy for preparing for essay exams. The *vocabulary* chapter (Chapter 12) provides a more generative approach to increasing vocabulary and has been expanded to include dictionary use. The vocabulary exercises are still tied to the chapters in the Appendix. All of these exercises provide practice in using both context and structure.

We are particularly pleased with the text chapters in the Appendix. Note that these chapters are from a variety of disciplines, and include such diverse content areas as computers, the arts, and business. Although instructors may not be able to use all of the chapters in one term, the diversity of the chapters should meet the needs of most students and colleges. As with the first edition, the Application Exercises at the end of each chapter in *DTT* apply to Appendix chapters so that students can use them to practice the strategies presented. As such, students learn that the strategies that work for the psychology chapter probably will not work for the chapter on the arts.

One final change deserves mentioning. Each chapter now begins with a *graphic organizer* or skeletal map, and ends, as before, with the *Key Ideas* section. By beginning each chapter with a graphic organizer, students see the important concepts that are presented as well as how they are organized right from the beginning. This should help them to remember and learn the strategies more easily.

The Instructor's Guide to *Developing Textbook Thinking*, with valuable information on the effective use of our text, is divided into four parts. Part I, *What Makes Developing Textbook Thinking Successful?*, discusses the philosophy and organization of the text. In Part II, *Effective Use of Developing Textbook Thinking*, we emphasize the importance of direct instruction and instructor modeling. Part III contains exams for the seven chapters from the Appendix. Part IV provides answers to those exams as well as answers to the vocabulary development exercises from Chapter 12.

To the Student

High school students often think that the most difficult thing about college is getting in. We feel, on the contrary, that the most difficult aspect of college is *staying* in. Many of you probably know fellow students who were accepted into college but for a variety of reasons were unable to continue. Some students are unsuccessful in college because they do not possess the study strategies needed to make good grades; others because they lack motivation. Students who have good study habits and are self-motivated are much more likely to be successful. In fact, research bears this out; those who use proper study strategies tend to outperform those who use incorrect or inadequate strategies.

Also, highly motivated students outperform those with low motivation across all ability levels.

The purpose of the second edition of *Developing Textbook Thinking (DTT)* is to expose you to strategies that, if properly applied, will increase your understanding of course material and subsequently your performance on exams. *DTT* not only outlines a complete study method but also gives you practice in applying this method to complete text chapters from a variety of disciplines. By using complete chapters, you can learn to think like a biologist or a historian. Thus, this book can supply the strategies and techniques, and your instructor can supply the guidance for improving your study skills. However, you must provide the motivation to learn and apply these strategies.

As you proceed through this book, you will find that studying and learning are hard work. Few people can read something once, do nothing else with the information, and score high on classroom examinations. Learning and remembering take determination and hard work, but using the strategies in this text will enable you to study more efficiently and effectively. This book presents a variety of methods so that you can try each of them, discover which ones work best for you, and make them part of your regular reading and studying habits.

Developing Textbook Thinking, Second Edition, is divided into three parts: Part I, Understanding College Reading and Studying Demands, presents three diagnostic tests to make you more aware of your reading and studying strengths and weaknesses, suggests ways you can develop and maintain motivation, introduces basic time management strategies, gives you some “tricks of the trade” concerning what it takes to be successful in college, discusses how texts from the humanities, social sciences, and physical sciences differ, and presents techniques for developing reading-rate flexibility.

Part II, Developing College Reading and Studying Strategies, focuses on an approach called PROR—Preread, Read, Organize, and Review. You can become an efficient and effective learner using this method because you are engaged in learning and monitoring activities before, during, and after reading. We believe that this type of active interaction is necessary in order for maximum learning to occur. We have introduced the PLAE (Preplan, List, Activate, and Evaluate) procedure to help students become more goal-directed in their test preparation.

Part III, Expanding College Reading and Studying Strategies, presents a system for taking lecture notes that also emphasizes the importance of what you should do before, during, and after the lecture. You are given helpful hints for preparing for both objective and essay exams and are shown the CDSS method of vocabulary development which focuses on context, dictionary use, word structure, and sounding out words.

Application Exercises follow each chapter and sample reading in *DTT*. There are two types of Application Exercises: exercises that focus on the strategies and content from *DTT* and exercises that can be applied to your own textbooks. Both types of exercises will give you practice with the techniques presented. You will also be able to apply the strategies discussed in this text to the sample chapters in the Appendix.

The changes that we have made in this second edition are a direct result of what we have heard from our students. It was through our students that we initially discovered the need for such a text, and over time we have revised it to add information that they have found useful. In this edition, we have tried to listen to both their praise and their complaints to make this text better. We are particularly proud of the breadth of the chapters included in the Appendix; students provided considerable input concerning the interest level of these chapters. We feel that they will give you a flavor for many of the courses that colleges and universities require.

We encourage you to keep an open mind as you work through *Developing Textbook Thinking, Second Edition*. Try out the new strategies and see which ones work best for you. Discover which techniques make you a more efficient and effective learner. Discuss your studying problems with your instructor and your classmates. Through your reading journal, keep track of your reading and studying progress. Remember, the strategies you learn from this text will help you not only today but also as you progress through your entire college program and beyond.

PART

I

Understanding College Reading and Studying Demands

College study demands differ considerably from those of high school. High school often stresses memorizing facts and details, and testing occurs more frequently and covers smaller amounts of course material. College stresses higher-level thinking skills. Testing occurs less frequently (perhaps only two or three times a term), and students must learn and remember large amounts of new information. Therefore, for college students to continue to use the same reading and studying strategies that they used in high school may make their learning inefficient and ineffective.

Many of you may not have any idea of what your reading and studying habits are. Because self-awareness is the key to improvement, whether in reading or anything else, the first step in developing effective strategies for college learning is to become aware of your own strengths and weaknesses. The three assessment tools in Chapter 1 can give you valuable information and help you to assess your knowledge of what college studying entails. The first chapter also discusses the reading journal, another tool for evaluating your awareness of what happens as you read as well as your level of comprehension. Remember, only self-evaluation, followed by motivation, will help you to develop reading and studying strategies that will contribute significantly to your success at the college level.

Chapter 2 addresses the issue of motivation in detail. Perhaps more than any other factor, motivation can determine how successful you will be in college. This chapter focuses on reasons why students may not be motivated and provides some suggestions for improving motivation. As you read Chapter 2, keep in mind that a high degree of motivation makes up for academic weaknesses; the opposite, however, is usually not true. All of us have known

people who were very smart, but not motivated. Students who fall into this category tend to drive teachers crazy!

Time management, another crucial aspect of being a successful student, is discussed in Chapter 3. Students are busy people and as such need a certain degree of structure to their daily lives, whether they want it or not. Those who plan a term schedule, in addition to more task-specific weekly schedules and daily “To Do” lists, tend to accomplish more in shorter periods of time. Such students have more, rather than less, time for fun activities. In Chapter 3, you will see how to budget your time more effectively so that you have enough time each day to accomplish all your goals.

Chapter 4, entitled “Tricks of the Trade,” provides a trove of suggestions to help you handle college life more efficiently. Hints on forming study groups, staying healthy, and utilizing campus resources are but a few of the ideas discussed in this chapter. These hints should help you to plan how to handle certain situations before they occur.

Finally, Chapter 5 provides strategies to help you be more flexible and efficient in your studying. Ideas for assessing your own background knowledge and the learning tasks posed by your courses and textbooks are discussed, along with suggestions for adjusting your study strategies and reading rates. Lastly, the chapter provides methods for increasing your reading efficiency.

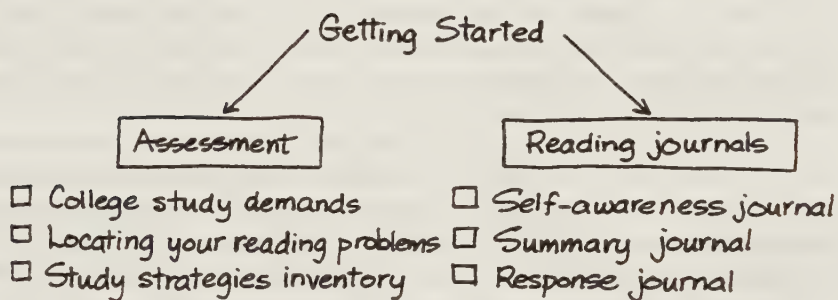
By the time you complete Part I of *Developing Textbook Thinking*, you should have a good idea of what kind of reader you are and what you need to do to become a more efficient and effective student. Right from the start, develop the motivation to want to develop your skills. This text can provide the awareness of what you need to do, and the techniques for doing it; *you* must provide the motivation.

I *Understanding College Reading and Studying Demands*

CHAPTER

1

What You Have to Do



This text is designed to help you to evaluate your reading and learning abilities and expand those abilities, build upon them, and use them to learn how to study and to think effectively in college-level courses. By using the strategies outlined here, you can better draw from your own prior knowledge and experiences to make learning easier. You will also learn how to monitor your learning progress to make test preparation and studying more effective. *Developing Textbook Thinking* exposes you to principles, techniques, and exercises that show you how to use your abilities to meet a variety of college study demands.

But merely reading this text certainly will not be enough. You must practice applying the techniques again and again, because the reading and studying demands in college are very different from those in high school. Not only is there more material to read and study in college, but expectations about what you should gain from your studying differ, as well. High school stresses facts; college courses stress concepts, theories, and understanding events. You are responsible for taking a wide range of information, analyzing it, criticizing it, applying it to new situations, and then putting it into a meaningful form. In short, in college there is a close relationship between

reading, studying, and thinking. Thus reading and studying without thinking, or reading and thinking without studying, will not help you to reach your full academic potential. However, the right combination of all three will contribute significantly to your academic success.

In order for you to absorb as much knowledge as possible in college, it is imperative that you become responsible for your own learning. College instructors are not responsible for your learning. Their function is to present the material in a clear, organized fashion, to stimulate original thought, and to guide you through new information. You must act on the material; that is, you must listen attentively in class, read your assignments, think about and analyze what you read, and develop reviewing strategies to avoid cramming. The suggestions you will find in this text will help you to become an active learner, one who is responsible for his or her actions, and one who can monitor his or her personal learning. As you read and work through the application exercises in *Developing Textbook Thinking* and as you ask questions and make connections between information and ideas, you should realize quickly that reading to learn and learning how to learn are not easy tasks. They are hard work, especially if you want to learn for the sake of learning as well as for receiving good grades.

As a starting point, answer the statements in the following three assessments. The first one assesses your knowledge of the demands placed upon you in college; the second assesses your reading strengths and weaknesses; and the third assesses your knowledge of study strategies. Be honest when answering the questions, because your reading and studying abilities can only be improved through an awareness of your personal strengths and weaknesses. By capitalizing on your strengths, you will be able to reduce your weaknesses.

Answers follow each assessment.

Assessment 1: College Study Demands

In the space provided, place a **T** if the statement is true and an **F** if the statement is false.

- _____ 1. The two factors that best differentiate between good and poor students are: (1) good study habits and (2) interest.
- _____ 2. Studying can make you tired.
- _____ 3. Students taking three core courses (courses all students are required to take regardless of their major) in a term average about 100 pages of reading a week.
- _____ 4. The more details you can memorize from the textbook, the better you will do on exams.
- _____ 5. Reviewing material more than triples your memory of it.

I *Understanding College Reading and Studying Demands*

- _____ 6. If you know the material in the textbook, you do not have to be as attentive during lectures.
- _____ 7. Given enough study time, almost any student can perform at the top of the class.
- _____ 8. On average, students have about ten hours per day of free time (time not spent in class, studying, eating, or sleeping).
- _____ 9. You should read most materials (such as newspapers, novels, and textbooks) at about the same rate of speed.
- _____ 10. In the figure below, try to connect the nine dots by drawing four straight lines without taking the pencil from the paper.



Assessment 1: Answers and Discussion

1. True. Research shows that good study habits and interest in the subject most clearly differentiate between students who do well and those who do poorly in classes.¹ This text will show you ways to develop good study habits and to develop interest—even in a boring subject.
2. False. Actually, lack of interest is usually what tires you. One key to effective study is to make boring material more interesting, and this text will examine ways of doing so.
3. False. Various surveys of courses at colleges across the United States show that if you took three core courses, you would have about 250 pages of reading per week, for an average of 83 pages per week per course. Reading matter includes textbooks, lab materials, novels, and supplementary materials.
4. False. This statement is false for two reasons. First, many survey courses stress the general principles, theories, and concepts in the field. If you memorize details, you might easily miss these broader areas, on which you are tested. Second, with so many pages to read per week, it is difficult, if not impossible, to memorize all the details. You must select what the author and the instructor stress. This text stresses the principle of selecting.

¹ H. C. Lindgren, *The Psychology of College Success* (New York: John Wiley and Sons, 1969).

5. True. Research shows that if you do not review material, you will remember about 33 percent of it after a week and about 14 percent after a quarter. If you do review, you should be able to remember 87 percent of it after a week and 70 percent at the end of the term.² There is a huge payoff in reviewing!
6. False. Many lectures cover information not in the textbook. Professors also use lectures to explain and stress the topics that they feel are the most important. You can bet that these topics will be covered on exams. Lectures help you review, understand, and gain information and study selectively.
7. True. We know that most students can perform in the top 20 percent of a class if they study the material to mastery.³ Some students can master a chapter with one reading and a review. Others need to read, reread, make notes, summarize, and review several times. This text will discuss ways to use your study time effectively. You can perform at the top of most classes, but you will have to work hard at it.
8. True. According to studies done by Arthur Dole,⁴ average students spend their time each week in roughly the following ways:

Sleep	49.3 hours
Study	19.8 hours
Classes	18.7 hours
Meals	<u>10.7 hours</u>
Total	98.5 hours

This schedule leaves 69.5 hours per week free for recreation, social events, free reading, and the like. Students may have ten hours free a day to devote to additional studying as well as recreation.

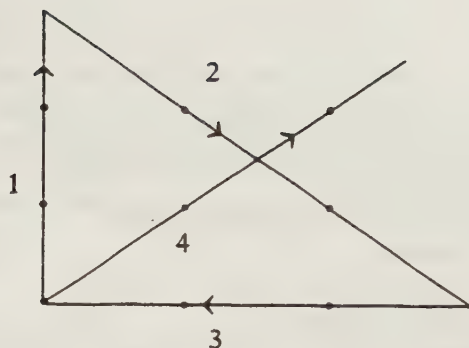
9. False. To make efficient use of your time, you need to read different materials at speeds that vary with your purpose and background knowledge. This text will show you ways to vary your reading speed.
10. This problem can be solved only by looking beyond a limited view of the solution and seeing that one does not have to stay within the dots:

² H. F. Spitzer, "Studies in Retention," *Journal of Educational Psychology*, Vol. 30, pp. 641–56.

³ J. Block, ed., *Mastery Learning: Theory into Practice* (New York: Holt, Rinehart and Winston).

⁴ A. A. Dole, "College Students Report on the Use of Time," *The Personnel and Guidance Journal*, Vol. 37, pp. 635–38.

I Understanding College Reading and Studying Demands



In short, your study and reading habits from high school are not completely appropriate for college. You need to expand your limits and to risk new ways of reading and studying in order to better prepare yourself. This text challenges you to try new techniques and to increase your abilities to meet the demands of college “textbook thinking.”

Assessment 2: Locating Your Reading Problems

The preceding quiz gave you an idea of the demands that will be placed on you in college courses. But awareness of the demands is not enough; you must become aware of your own reading habits. Only through this self-awareness can you improve poor reading habits and keep good ones.

The American Heritage Dictionary defines a habit as “a constant, often unconscious inclination to perform some act, acquired through its frequent repetition.” Not all habits are bad, of course. Reading habits can be helpful or distracting. But even bad reading habits can be changed. What enables one person, but not another, to break or modify a bad habit? The answer has two parts: awareness and motivation. First, people must become aware of their bad habits. Second, they must make a conscious effort to change. Notice that although habits occur unconsciously, it takes a conscious effort to alter them.

Consider the following questions about your reading habits. In order for this assessment to be of any value, you must answer each item honestly. The chapter in *Developing Textbook Thinking* that addresses each question is indicated in parentheses.

1 What You Have to Do

Group I

	Yes	No
1. Do you usually pick up a book, magazine, or newspaper and begin to read immediately, without considering your purpose? (Chapter 6)	_____	_____
2. As you read, does every statement seem equally important? (Chapter 5)	_____	_____
3. Do you ever go back to reread a phrase or sentence you have already read? (Chapter 5)	_____	_____
4. If you find an unfamiliar word in your reading, do you skip over it? (Chapter 12)	_____	_____
5. Do you have difficulty defining the main idea in a passage? (Chapter 7)	_____	_____
6. Do you have difficulty remembering telephone numbers that you have just looked up? (Chapter 6)	_____	_____
7. Do you ever discover that you remember no details of a magazine article you read last week? (Chapter 6)	_____	_____
8. Do you read everything at the same rate? (Chapter 5)	_____	_____

Group II

1. Do you own a good dictionary, and do you refer to it often? (Chapter 12)	_____	_____
2. Can you rapidly locate the main thought in a long, involved sentence? (Chapter 7)	_____	_____
3. Can you follow and summarize the train of thought as you read a long selection? (Chapter 7)	_____	_____
4. Do you ever underline or make notes as you read? (Chapter 7)	_____	_____
5. Do headings and subheadings seem significant to you when you are reading? (Chapter 6)	_____	_____
6. Do you ever notice a lack of logic in the articles or texts you read? (Chapter 7)	_____	_____
7. Can you distinguish between fact and opinion? (Chapter 7)	_____	_____
8. Can you explain exactly why you liked or disliked a story you read recently? (Chapter 5)	_____	_____

Assessment 2: Answers and Discussion

In order to assess your reading habits, count the number of times you answered *yes* in Group I. Each *yes* represents a poor reading habit that you must work to change if you are to handle college-level material successfully.

How many times did you answer *yes* in Group II? Here, each *yes* represents a good reading habit that you will want to maintain or improve upon.

Make sure that you note which chapters in *Developing Textbook Thinking* address your weaknesses. You can use the ideas presented in these chapters to improve your reading habits. In addition, as you read this text and learn more about how to read and study efficiently, periodically reassess your reading habits. Then go back and review the chapters noted in the parentheses if necessary.

Assessment 3: Study Strategies Inventory

	Yes	Some- times	No
1. I adjust my rate according to the type of material I am reading. (Chapter 5)	_____	_____	_____
2. I look through a chapter before reading it. (Chapter 6)	_____	_____	_____
3. I mark my text while I am reading. (Chapter 7)	_____	_____	_____
4. I have a difficult time maintaining concentration for a period of time. (Chapter 5)	_____	_____	_____
5. I tend to cram for major tests. (Chapter 11)	_____	_____	_____
6. I understand my notes weeks after I have taken them. (Chapter 10)	_____	_____	_____
7. I plan study sessions well in advance of a major exam. (Chapter 11)	_____	_____	_____
8. I use a variety of study techniques. (Chapter 8)	_____	_____	_____
9. I can use the proper strategies for specific content areas. (Chapter 8)	_____	_____	_____
10. I read an entire chapter before stopping to think about it. (Chapter 6)	_____	_____	_____
11. I can distinguish important from unimportant information. (Chapter 7)	_____	_____	_____
12. To prepare for a test, I try to memorize lots of facts. (Chapter 11)	_____	_____	_____
13. I have very little trouble with content-specific vocabulary. (Chapter 12)	_____	_____	_____
14. I try to predict items that an instructor might ask on a test. (Chapter 11)	_____	_____	_____
15. I do well only in subjects that interest me. (Chapter 5)	_____	_____	_____
16. I get extremely anxious during tests. (Chapter 11)	_____	_____	_____

	Yes	<i>Sometimes</i>	No
17. I have a systematic method for taking lecture notes. (Chapter 10)	_____	_____	_____
18. I take detailed notes from my text while I am reading. (Chapter 7)	_____	_____	_____

Assessment 3: Answers and Discussion

For numbers 1, 2, 6, 7, 8, 9, 11, 13, 14, and 17, you should have answered *yes*, because each represents a valuable study strategy. You should have answered *no* to numbers 3, 4, 5, 10, 12, 15, 16, and 18. These items describe inefficient or ineffective strategies which you should try to change.

If you answered *sometimes* to a number of items, you are probably inconsistent in your use of study strategies. You may be somewhat aware of what you should do, but you may often choose not to apply your knowledge.

As with Assessment 2, make sure that you pay particular attention to the chapters indicated following each item. Reassess your studying behaviors at mid-term, as well as at the end of the term, to see how much you have improved.

The Reading Journal—Becoming More Aware

You thus begin this book armed with three pieces of valuable information—the demands of college reading and studying, an awareness of your reading habits, and your own assessment of your use of study strategies. It is important to go a step further now and examine what happens when you read specific kinds of material (for example, magazines versus novels versus textbooks). There are several types of reading journals you can keep as a valuable means to this end. Although your instructor may want to evaluate your journal regularly, remember that the journal is primarily for your benefit. If you write good entries and consciously think about what happens when you read, your journal will be valuable in helping you not only to discover exactly what happens when you read certain kinds of material, but also to determine why you may have problems.

Self-Awareness Journals

Few students actually evaluate what happens when they read. If you asked fellow students to tell you what happens as they read a text, newspaper, or magazine, they probably would respond with “I don’t know” and give you a strange look.

Because self-awareness is vital in improving reading habits and abilities, thinking and then writing about what happens as you read can be a powerful self-assessment tool. After you have read an article, chapter, or the like, use the following questions to guide your writing:

1. How interesting was the article? Did it hold your interest the whole way through? Why or why not?
2. Could you concentrate? If not, why do you think concentration was a problem? Where were you reading? At what time? Did you have other things on your mind?
3. Was the reading easy to understand? What made it easy or difficult? How was the article organized?
4. How difficult was the vocabulary? About how many words were unfamiliar to you? Did the difficulty of the vocabulary affect your comprehension?
5. What do you think your rate was like? very slow? slow? very fast? Why do you think you had that rate?
6. How much did the length of the article affect your reading? Do you think the article was too long? too short?
7. What kinds of information do you remember? major concepts? details?
8. How does the article personally affect you?
9. What did you know about this topic before you began your reading? Would you like to know more? Why?

After answering these questions honestly and recording your responses over a period of time, you will see patterns emerging. Use these patterns to improve your reading skills and habits. For example, you may discover that as your interest declines, your rate, comprehension, and concentration decline as well. You may realize that you get bogged down in details. Realizations such as these are valuable because they point to problems that can be remedied by a combination of your motivation and your instructor's guidance.

To avoid certain pitfalls when you write your entries, read the following two examples. Then decide which entry is the better of the two. Explain your choice.

Example 1:

The article was on Social Security. It gave a history of the Social Security system and talked about what might happen if the Social Security system continues the way it is now. I thought it was boring, and I don't like to read stuff about the government.

Example 2:

The article, "The Social Security Crisis," was not very interesting to me. There were so many statistics that I got lost. While I was reading, I thought I understood the main ideas, but when I finished I realized that I

could only remember a few unimportant details, such as the number of people who are on Social Security. Because the article was so long, I could feel my rate getting slower and slower. The more slowly I read, the poorer my concentration became. I even nodded off two or three times. It was hard to maintain interest in something that is not going to affect me for 45 years! Besides, the vocabulary was really hard. I underlined 12 words that I did not know the meaning of. I think it's terrible that people who have to pay Social Security all their lives may not get any money when they retire. How unfair!

Which example was better? _____

Why? _____

Example 2 is the better entry, because the student included information about the following:

1. Interest level
2. Ability to concentrate
3. Understandability of the article
4. Vocabulary level of the article
5. Reading-rate awareness
6. Length factor in the article
7. Types of information remembered
8. A personal reaction

Notice that this type of journal entry is not a summary. The purpose of this entry is to make you aware of what happens when you read and why it happens. Summaries serve different purposes.

Response Journal

Sometimes you may be asked to write a response to what you have read, especially if the article is of a controversial nature. Such a response forces you to clarify your thinking on a topic and to back up your reactions with information from your reading. The important aspect of a response is to support your viewpoint with facts. Doing so shows you whether you understand the issue well enough to support your stand.

For example, suppose you are asked to write a response to an article about an individual who was charged with murder, convicted, and sentenced to death. Following the electrocution, evidence emerged that proved the person actually had been innocent of murder. Your response is to state whether you believe in capital punishment and to use evidence from the article to support your stand. You probably would want to include the information about electrocuting an innocent individual. Simply stating that you do not believe in capital punishment because it is immoral to kill a person under any circumstances will not suffice.

What follows is an example of a good response journal. Notice that this student took a stand on the issue and then supported that stand with both examples and opinions. Since this is not a summary journal, it is fine to express your opinion; in fact, in a response journal, an opinion is expected. Remember that it is not important what stand you take. Instead, how you support your stand becomes the key issue here.

Even though John Doe was executed for a crime that it *appears* that he did not commit, I remain in favor of the death penalty. In this particular instance, the article did not do a very good job of convincing me that John Doe was actually innocent. Just because another person comes forward and confesses to the crime does not mean that he is telling the truth. In fact, the confessor had admitted guilt to two other crimes that he could not have possibly committed. Doe, however, had a history of prior crimes similar to the one for which he was given the chair. In addition, he had a retrial as well as numerous appeals to try to prove his innocence. Both failed to produce convincing evidence.

Crimes such as the one committed by John Doe are awful and should be punished to the full extent of the law. John Doe violently assaulted and then killed a six-year-old child. He showed no remorse for what he did. People like this serve no purpose in society except to make it more violent and less moral. Why should tax-paying citizens have to pay to feed and clothe individuals like John Doe? Take the money that would be spent keeping someone like Doe alive and give it to the families of their victims. That's where the support should go.

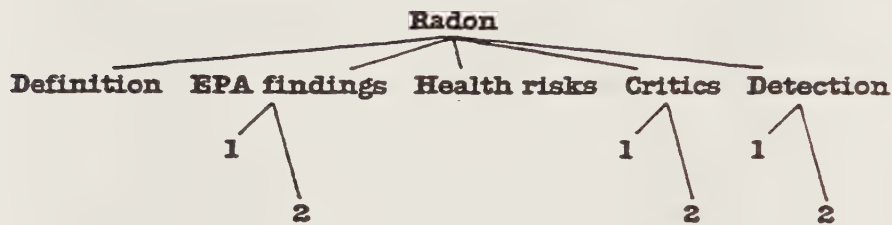
Summary Journal

Another way to write a journal entry is to summarize your reading. Summarizing an article or portion of a text chapter is one way to determine whether you understand the author's message. Summaries also can be used as a secondary rehearsal strategy (see Chapter 8).

Writing a good summary takes considerable practice. You will be well on your way if you keep in mind the following suggestions:

1. Read the entire article first. As you read, underline key points and make brief notes in the margin.

2. After reading and marking, stop and ask yourself what important ideas are presented. Determine which details you should include in your summary. Make a skeletal map.
3. Organize your thoughts before beginning to write. A summary does not have to be organized in exactly the same manner as the article.
4. Do not write as you read. Writing as you read often causes you to include unnecessary details. It also tires you before you complete your reading, so your summary will not be comprehensive.
5. Putting information in your own words indicates that you really understand what you have read. Often students think they are summarizing when actually they have merely copied random sentences from the reading.
6. When you have finished, read the entire summary. Check to see if it is well organized and captures the author's thrust. Could someone else read your summary and make sense of it?



Share Your Entries

When classmates share journal entries, they gain insight into the thinking processes and ideas of others. Shared responses to reading are particularly helpful. Make your writing someone else's reading.

Use what you learned about your own reading and studying habits from the assessments at the beginning of the chapter to guide your reading and journal writing. Then compare your results with those of your classmates. It is likely that others have some of the same weaknesses. It often makes people feel better when they know that others share their problems. If you know that your reading rate is a problem, you can strengthen that area as you read. Discussing with others how you attempt to solve your problems also will help you to strengthen those areas. After sharing and discussing, write about your experiences in your journal. Keep in mind that as you do journal entries

for different types of materials—magazines, novels, and texts—you will be better able to define your strengths and work on your weaknesses.

Key Ideas

1. The demands of college differ considerably from those of high school. Therefore, study demands must also be different.
2. Assessing your reading and studying strengths and weaknesses is an important step in becoming a more efficient learner.
3. Reading journals are tools to make you aware of your reading habits and your level of comprehension. Three types of journals serve different purposes.
4. Share your journals with classmates.

Application Exercises (DTT*)

1. At the end of this text, on page 216 appears an article entitled “Prisoners of Pain.” Read the article, and then write three different journal entries:
 - (a) a self-awareness journal
 - (b) a response journal
 - (c) a summary journal

Use what you have learned in the chapter to guide your writing. Refer to the questions on page 11 when you write the journal.

2. Now read the first three sections of “The Stormy Sixties” from the Appendix. Write what happened as you read this selection, and compare it to what happened when you read “Prisoners of Pain.”
3. As you read this text, continue to keep writing your journal entries. Your entries will be particularly helpful when you begin reading the complete text chapters in the Appendix. Think carefully about what happens as you read, and write about it. These entries can help you to determine what you need to change in your reading habits.

Application Exercises (Your Texts*)

1. As you read a chapter in one of your own texts, think about what happens as you read. Then write a self-awareness journal to indicate what you observe.

* ‘DTT’ (Developing Textbook Thinking) exercises use material found in this textbook, and give you practice on typical college material.

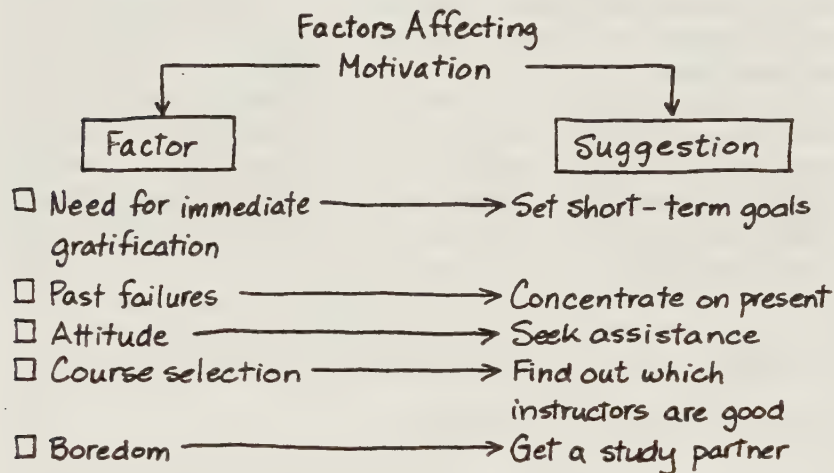
* ‘Your Texts’ exercises are designed to give you practice in applying study techniques to textbooks you are using in your other classes.

2. Compare and contrast what happens when you read something from a newspaper to what happens when you read something from your text. How does interest affect what happens?
3. Write a summary journal for one section of the text chapter that you read. Use the guidelines discussed earlier in this chapter for writing your summary. Make sure to sketch out a skeletal map prior to writing your summary.

CHAPTER

2

Finding the Motivation



One of the keys to success in college is motivation. With motivation, you can accomplish many things that you may have thought were impossible; without it, you can cut your college career short. You probably know someone who is smart but who does not make good grades. Such students never do homework, rarely study for tests, and show little or no enthusiasm for what occurs in class. In other words, their performance is not in line with their potential. Working up to your potential—being the best that you can be—requires motivation.

In college no one looks over your shoulder and tells you to do your homework or to study for tests. Professors want you to succeed, but they will not track you down to find out why you failed to turn in a paper or why you did poorly on a test. College instructors rarely check to see who appears in class. In short, professors expect students to take the responsibility for turning in assignments, doing well on tests, and attending classes. It is not professors' responsibility to motivate you; they expect you to be motivated

already. Most instructors are willing to help you if you ask them, but do not expect pampering or sympathy if you are doing poorly yet never attend class.

Students who are motivated are, as a general rule, successful. They begin their college careers earning good grades and generally continue to do so. Conversely, students who start college unmotivated and therefore make lower grades may continue on that same path until they are either dismissed or become motivated. Success seems to beget success, and failure seems to beget failure. If you begin as a motivated freshman and continue to be motivated as you progress through your degree program, you will reap the rewards of good grades and a positive self-image.

One of our students told us that it was difficult to earn high grades in college. She was right. In high school, you competed with students from a wider ability range than in college. In college, students are at least average or above average in intelligence and had above-average performances in high school. Therefore, in college you must be motivated in order to compete with students who are at least as intelligent, and maybe even more intelligent, than you are. Think of it this way: You would not have been admitted to your college unless someone felt you had the potential for success. You already possess the potential; now you must consciously provide the motivation. The two attributes go hand-in-hand. The remainder of this chapter will (1) examine some of the more important factors that affect motivation, and (2) offer some suggestions about how to become motivated and/or maintain that motivation.

Immediate Gratification Versus Delayed Gratification

Often students find it difficult to become motivated for something that is two or four years away. It seems to be a universal psychological principle to have the attitude, "I want it, and I want it now!" This is why students who were only lukewarm about going to college when they graduated from high school often decide to find jobs and delay attending college—doing a job and then receiving immediate gratification in the form of a paycheck wins out.

Since the big payoff in attending college comes down the road—better jobs, higher salaries, job security—students must look for short-term gratification in other ways in order to remain motivated. This gratification can take several forms: earning good grades, learning new information, meeting new people, and having new experiences. For some freshmen, college is their first time away from home, and thus they are motivated to show family and friends that they can succeed with their new freedom. For other freshmen, college follows several years of work experience and the growth of a desire to better one's self. In this situation, motivation may come from wanting to show an employer, wife, husband, or children that the individual can be suc-

cessful. No matter how you receive this gratification, take your accomplishments as they come. Rather than constantly thinking “Four years from now is a long time!” consider the short term, “I’m really going to celebrate at the end of the term if I make a *B* in this class.”

Even more immediate, try to maintain day-to-day motivation by studying first and playing later. Students who attend to their work on a daily basis tend to stay motivated to a higher degree than those who study in a catch-as-catch-can fashion. Even if you are a working student, try to plan your study time from week to week as a way of maintaining motivation.

If Necessary, Wipe Out the Past

As mentioned previously, it is important to get off on the right foot. However, many students do not for a variety of reasons. If you are one of those students who failed to make a good start or who somehow got off track, do not concentrate on blaming yourself! The worst thing you can do is to sit around and think about what an awful person you are and how you have failed. Move on; pick yourself up and try again; wipe out the past. Think positively, and don’t dwell on the past, but on the future instead. Imagine yourself in a new job as a result of your newfound motivation and success . . . Imagine yourself half-way through your coursework . . . Imagine yourself with a 3.0 grade-point average . . . Imagine yourself with a *B* in a difficult course. Imagine anything positive and nothing negative. Wipe out the past. Don’t think about what you did but about what you are going to do. Tell yourself “I can,” not “I failed.”

Developing the Big M

Just as no one is born a Republican or a Democrat, no one is born with motivation. Motivation, like political persuasion, is developed and learned over a period of time. Unfortunately, there is no magic formula for developing it or for teaching it. Researchers really cannot explain why some people have motivation and some people do not, or why some people suddenly become motivated. We know that role models play a key part in the process. That is, if your parents are highly motivated and work hard, or if your peer group tends to be motivated toward success, you stand a better chance of following in their footsteps. However, this is not always the case.

Another thing that is known about the Big M is that it tends to compensate for some academic weaknesses. Students who, within reason, score lower on the SAT or ACT but are motivated to learn and study as reflected by high school grade-point averages stand a better chance of being successful in college. In fact, a recent study by the New York Public Interest Research Group found that the SAT is only slightly better than random chance (50–50)

in predicting students' college performance. One reason for this finding is that motivation is reflected much more in individuals' high school grades accumulated over four years than in one standardized test score taken at one point in time such as the SAT.

If you are not motivated to do well in college, one of the things that you should do immediately is to examine the reasons why you are attending college. Most of the students we have worked with who have not done well did not really want to be in college. Some were there because their parents forced them to go; others were there because they were too unmotivated to work, so they saw college as a way to delay taking responsibility for themselves. Even older students who decide to go to college some years after they have graduated from high school often attend because of family pressure or job boredom, rather than because their goal is to obtain a college degree. Motivation is highest when you are doing something because you want to do it.

Another reason why students are unmotivated is because they cannot choose a major. Many students who begin college without a career focus lose motivation. Again, family often enters the picture negatively in this situation by getting frustrated when John changes majors, thus losing credits every term. Also frustrated, John gives up and loses his motivation. In this situation, no one wins. This is not to say that everyone should know exactly what they want to major in, and that highly motivated people never change majors. The point is that if you have no idea about what you want to major in, you should get help during your first year or two. Most college campuses offer assistance and counseling to students to help them become more focused in a career choice. Even if you can begin by identifying a general area—"I know that I want to major in business"—it then becomes easier to identify what aspect of business will most interest you. Often, the feeling that you are doing something to explore different careers will motivate you to want to do well in your courses.

Maintaining a Positive Attitude

It is rare—and sad—that individuals who have managed to survive 12 years of formal education cannot objectively evaluate themselves positively. Most of us have been conditioned to stand up and take notice of the things we have done wrong, while virtually ignoring the things we have done right. It is the rare teacher who will compliment students for getting five out of ten answers correct because that is only 50 percent—and we all know that 50 percent is equivalent to the letter grade of *F*. What we have heard over and over is that we got five wrong, not five right. In the workplace, similar scenarios occur. Bosses rarely pat employees on the back for a job well done, but employees certainly find out if they have done something wrong. With so many negative encounters in school, at work, even at home, it is not surprising that so

many students enter college with negative opinions of themselves, particularly with negative opinions of themselves as learners.

If this has been your experience, try to be aware of it. Think about all the times that someone pointed out your mistakes, and learn from it. In everything you do, try to find something positive that you have done or learned as a result of the experience. Maximize your successes and downplay your failures. Learning from your failures is one way to maintain a positive attitude. Ignore neither your successes nor your failures, but do not dwell on the negatives.

If you are having academic trouble, do something about it. Just taking action is often enough to restore or maintain a positive attitude. (1) Talk to your professor to find out what you are doing wrong in terms of class and test preparation. If your professor is not helpful, (2) see if your campus has a learning center or tutorial services. (3) Seek the assistance of others in your class by forming a study group (see Chapter 4), or (4) trade services with someone who needs help in a subject in which you are strong. (5) If you can afford it, pay for a tutor. Nothing helps you improve more rapidly (either mentally or physically) than having to pay for it.

Getting help when you are in academic trouble is important. It is a fact of life that in order to maintain a positive attitude and motivation you must have more academic successes than failures. Remember what we said earlier—success begets success. Hence, the sooner you get help, begin experiencing academic success, and view yourself in a positive light, the sooner you will be motivated to maintain that success.

Selecting Courses—What Is in It for You?

The courses you select play a key role in your level of motivation. Because of this, there are several factors to keep in mind as you register for your classes. First, if possible, select at least one course every term in which you have a relatively high degree of interest. Usually this is not so much of a problem once you get into your major area of study because most students are more interested in their major. However, core courses—those introductory or basic courses that all students are required to take—are a different matter. It makes sense that the higher the interest, the higher the motivation.

Second, once you decide on the courses you want to take, ask around about professors. Keep in mind that the easiest professor is not necessarily the best. Try to get instructors who generate interest in their subject matter, care about students' learning, are good lecturers, and give fair and well-written exams. Remember that a good professor can often compensate for what would normally be boring subject matter. A good instructor can also change your perceptions about what is boring. If you like a subject, or if you like the professor, your motivation will usually be higher.

Third, do not overload your schedule. Nothing affects motivation more severely than having no time for simple relaxation and fun. Students who

have such a difficult schedule that they have no time either to themselves or for socializing with friends often become frustrated, angry, and ultimately unmotivated. (We will discuss scheduling more when we introduce time management in the next chapter.) Suffice it to say here: Be reasonable in scheduling so that you can comfortably fit everything in. If you work or have a family, it is particularly important that you think about other obligations when you are registering for courses.

Finally, the underloaded schedule can be equally problematic. Students who have too much unstructured time either become bored or fritter away large blocks of time. For students with too much time on their hands, going to any class often becomes a chore. In addition, having too light a load one term often forces students to overload their schedule the next. The moral of the story is to strike a balance when you schedule your courses.

Fighting Boredom

Another key reason why students lack motivation or become unmotivated is because they view most of their courses as boring. As stated earlier, if you have selected your courses wisely, that should take care of part of the problem. However, even the most cautious and selective students sometimes select losers, or, in some instances, may have little of interest to choose from when registering for classes.

Should you find yourself in this unfortunate position, there are several things you can do, most of them psychological, to stay motivated through the term. First, most courses do have some interesting aspects. Search for these aspects by trying to personalize them in some way. If you can use your own experiences to make what you read and study more applicable to your own life, the boredom may lessen. One of our students once told us that he made information on Social Security interesting by thinking what it must be like for his grandparents to live on their fixed income. It made him start thinking about the importance of some kind of supplemental retirement plan, something the average 19-year-old probably does not ponder with any degree of regularity.

Second, a really boring class is more easily tolerated if you study with someone. The old adage, "misery loves company," is certainly true. Divide up the workload in terms of making rehearsal strategies for the tests (see Chapter 9) and share them with the person(s) with whom you study. While you will still have to read the material, attend class, and take good notes, dividing up the work and then studying with others helps improve motivation.

Third, study uninteresting course material in small doses by giving it daily attention and, as much as possible, studying it first. Many students make the mistake of either putting off the boring class until they are so far behind that it is very difficult to catch up, or studying their interesting classes first with good intentions of getting to their boring class last. More often than not, students manage to avoid the boring class by using excuses like

"I'm tired," or "I promise myself I'll get to it tomorrow." If either of these scenarios sounds familiar, shift your studying priorities.

Finally, if all else fails, try the psychological game of "It only lasts one term, and I can do anything for that period of time." Try to put the time period in perspective. For example, if your school is on a quarter system, what are ten weeks out of an entire lifetime? Remember that time is relative, and in the big picture, a term of school is only a tiny fragment of your life.



Studying when you are tired is inefficient and ineffective. This student needs to devise a schedule that allows enough time for both sleeping and studying. (Ellis Herwig/The Picture Cube)

Key Ideas

Motivation is probably the most important aspect of being a successful student. Those who are adequately motivated have a stronger likelihood of success in college and in life than those who might be smart but unmotivated.

2 Finding the Motivation

Since motivation is something that is learned rather than biologically transmitted from parent to child, anyone who is unmotivated can become motivated; anyone who is already motivated can maintain that motivation with a little effort. There are numerous ways to acquire and maintain motivation. For example:

1. Set short-term goals for yourself so that you receive some kind of immediate gratification.
2. If you have not been very motivated in the past, turn over a new leaf. Put failures behind you and concentrate on your newfound successes.
3. If you are not motivated, examine the reasons why.
4. Make sure that you have career goals or are at least exploring the possibilities.
5. Maintain a positive attitude about yourself as a learner.
6. Select your courses and plan your schedule with care to maximize motivation.
7. Try to personalize learning to make it more interesting.

Application Exercises (DTT)

1. Write about your level of motivation. Which aspects of this chapter apply to you? What might you do either to maintain or to improve your motivation?
2. Interview a classmate about his/her motivation. When is your classmate most highly motivated? How is he/she like or different from you in the area of motivation?
3. Keep a motivation diary for a minimum of one week. Write in this diary on a daily basis, and discuss when and why you are extremely motivated, moderately motivated, and unmotivated. Share this diary with classmates for similar experiences.

Application Exercise (Your Courses)

Write a journal article that focuses on a course in which you were extremely motivated and one in which you had a low degree of motivation. What were the elements of each? What caused the difference in your level of motivation? What would you do to compensate for low motivation at this point in time?

CHAPTER

3

Finding the Time



Following motivation, the next most important characteristic that college students can possess is the ability to manage their time in an effective manner. Do you know people who are chronically late for everything? No matter how hard these individuals might try, they never seem to get anywhere on time. And if you are a person who is always punctual, people like this probably drive you crazy.

In this chapter we will examine some ways to help you manage your time so that even if you are chronically late, you can use these hints to use your time more effectively. If you already tend to be on time for things, the information in this chapter may help you budget your time even more efficiently.

Self-Discipline

Up through high school, most students have parents who keep after them to do their schoolwork. You probably hated to hear questions such as "Is your homework done?" or "Did you study for that big history test?" Perhaps worse yet were the threats: "No, you cannot have the car until your home-

work is completed” or “You know what will happen if you don’t get all *B*s on your report card. You’ll never get into college.” Sound familiar? But as much as you may have hated these reminders, they probably served a purpose of which you were unaware—they kept you on task. For whatever reasons, parental pressure helped you get things done, and they could be at least partly responsible for your presence in college. But today is a different story.

One of our students told us that it was very hard for her to become self-disciplined once she arrived at college. Her parents had always kept her on track. She was from a relatively large family that saw the value in, and the importance of, an education. Hence, on every school night, between 7:00 PM and 9:00 PM, the television was turned off, and everyone in the house studied. Mom and Dad read, and if the children failed to have any written homework, they studied or read. But when Barbara got to college, there was no one there to force her to study. At first she rationalized that she was only taking three classes, not six as in high school, so there really was not any need to spend two or more hours every night preparing for class. She pledged a sorority, got involved in other clubs, had a very active social life, and, in general, was having a marvelous time. However, after she took her first tests, Barbara’s grades were not so marvelous—two *D*s and an *F*.

Barbara’s motivation to get organized so that she could improve her grades was initially still due to her parents. She kept thinking about how disappointed they were going to be in her, but she also realized that she was disappointed in herself. She knew that she was capable of doing the work, but that she had not yet managed to find the self-discipline needed to get the job done. She frittered away large amounts of time, planned no set study schedule, and had an unbalanced proportion of play-to-study time. It was only when Barbara motivated herself and learned how to use her time to her advantage that she was able to turn things around. And although her grades that first term were not great (she managed to pull all *C*s), she went on to become a Dean’s List student.

Unfortunately, not every student’s story ends as positively as Barbara’s. Many students never manage to develop that first step of self-discipline, nor do they learn the art of budgeting their time wisely. Sometimes it is difficult to remember that everyone has the same number of hours in a day. While some have more activities to cram into those 24 hours, everyone has to learn how to manage their time efficiently if they want to be successful. Once you are willing to exhibit some self-discipline, you can take steps to have adequate time for all of your activities.

I Understanding College Reading and Studying Demands



Setting aside a quiet place for studying, with all of your books, notes, and materials at hand, promotes effective learning. (© Carlos Vergara/Nawrocki Stock Photo)

Setting Goals

In the chapter on motivation, we discussed the importance of goal-setting. We made the point that it was easier to maintain motivation once you have relatively clear goals and continue to set new goals once the old ones have been achieved. The same idea holds true when discussing time management issues. Students who manage their time efficiently and effectively generally have set goals for themselves and are willing to make modifications in their lifestyles in order to achieve those goals.

3 *Finding the Time*

When most students enter college, their most obvious goal is to obtain a degree. But such a long-term goal is not sufficient. College students need to set goals for each term, goals for each week, and still smaller goals for each day. That is why it is important to write down your goals. At the beginning of each term, set several goals for yourself. Goals such as "I want to make all *B*s in my classes" or "This term my goal is to give daily attention to each of my classes" help you to stay focused. Hang up your list of goals in a prominent place. Share your goals with friends and family. Make your goals realistic, so that you do not set yourself up for failure. If you have three extremely difficult courses, maybe you need to modify your goals to be happy with two *C*s and one *B*, rather than all *B*s. Also remember that since these goals are more global in nature, set only a few goals. Two or three overall goals for a term would be reasonable; eight or ten overall goals would be too many.

Once your goals are defined for the term, then once each week, set your weekly goals. These goals should be more specific than the term goals but should, in some way, reflect the term goals. For instance, if one of your term goals was to receive a grade of *B* in your psychology class, one of your weekly goal sheets for the class might appear as follows:

Weekly Goal Sheet

1. Start to do research for psychology paper (due in three weeks).
2. Read and annotate Chapters 4 and 6.
3. Make concept cards and maps for Chapters 1–3 in preparation for a test in two weeks.

Notice several things about these goals. First, this student knows the importance of preparing for tests and beginning to write papers early. Second, she knows the differences between reading, studying, and reviewing. Note that she is just beginning to read two of the chapters, but for the chapters that she has already read, she is ready to make a variety of rehearsal strategies. Finally, if she carries out these goals, she is working toward that overall goal of receiving at least a *B* grade in the psychology course. (Subsequent chapters will deal with each of these issues.)

The final type of goals that you should set are daily goals. Daily goals are best done in the form of what many call "To Do" lists. These lists should be made either just before you go to bed, or right before you get started for the day. Put your lists on 3 × 5 cards and then paper clip them to your notebook or put them in your pocket or purse. Many people think that the only individuals who use "To Do" lists are those with poor memories. Not so. Students are busy people who have numerous responsibilities to juggle. Without some sort of daily plan, important things often are left undone. Most students do not mean to forget; it is just that there are so many activities that forgetting is easy to do.

Another function of the "To Do" list is to let you see what you have already accomplished and what you have yet to do. Therefore, try to prioritize your list, putting those things you must get done on the top; lower priority items are placed further down the list. As you complete your tasks, cross them off and proceed to the next item on the list. It may be only a psychological phenomenon, but it gives you a sense of accomplishment when you can see all of the things that you have managed to get done. If you still have tasks left on your list at the end of the day, they should become the priority items for the following day. You will be surprised that once you become used to setting goals and making "To Do" lists, it will be difficult to stop.

Once again, your daily goals should reflect both your overall goals, as well as your weekly goals. In addition, most students like to include activities on their lists other than those that are course-related. Continuing with the example we used previously, a daily "To Do" list for the psychology class might include the following:

To Do

1. Spend one hour in library (psychology research).
2. Read and annotate Chapter 4.
3. Map Chapter 1.
4. Do laundry (I have no clean clothes).
5. Call home before my parents disown me.
6. Sorority meeting tonight.

It is important for everyone to have goals. When you no longer have goals, it is more difficult to get things done and certainly more difficult to manage your time. The next section will help you become a more efficient student who can have enough time to accomplish all of your goals. As a means of supplementing goals and arranging specific times to meet all of your goals, we will discuss scheduling.

Schedules

Because everyone has 24 hours a day in which to get things accomplished, it seems reasonable to think that you should be able to get everything done in that period of time. But for most people, time always seems too fleeting. If we start by examining the amount of time we have in a realistic fashion, it is easy to see how much of it we waste. Think about it this way. An average student's daily accounted-for time may look something like this:

Sleep	8 hours
Class	3 hours
Eating	2 hours
Total	13 hours

That still leaves 11 hours every day for obligations other than eating, sleeping, and attending class. The point of this example is to show that each of us probably has plenty of time to take care of all of our obligations; it is just that we do not do a very good job of budgeting that time. Even students who work three or four hours a day still have seven or eight hours for studying and for recreation time. But it takes some effort to manage time so that you can fit everything in. You have seen the importance of goal-setting. Now let us examine how to get everything accomplished as a way of meeting those goals.

Term Schedules

There are two types of schedules that you will need to construct in order to organize and budget your time wisely: a term schedule and a weekly schedule. Just before each term begins, after you have your class schedule and know what additional obligations you will have, make a schedule for the term.

The schedule should follow a format such as that presented in Figure 3.1. To make your term schedule, first block out all of your set obligations, that is, things you must do. This includes being in class, sleeping, working (if you have a job), eating, going to church—any obligation that is set and that you are relatively sure will remain stable throughout the term. If you plan to work but are not sure how many hours weekly or daily, estimate as best as you can.

Next, look for blocks of time and fill in other obligations that require consistent attention, yet are more flexible in terms of when they can be inserted into your day. These activities would include studying, spending time with friends, or miscellaneous activities such as doing laundry, cleaning your room or apartment, shopping, and so forth. Make sure that you include things that are often oversights. For example, if you have a favorite television show(s) that you simply must watch, make sure that you include it. Finally, check your schedule for balance. Answer the following questions:

1. Do you have an adequate amount of study time?
2. Do you have an adequate amount of recreation time?
3. Is there a balance between study time and recreation time?
4. How much time is unexplained—time where nothing is being done?
5. Have you left enough time for miscellaneous activities?
6. Do you have some flexible time built in in case of an emergency?

I *Understanding College Reading and Studying Demands*

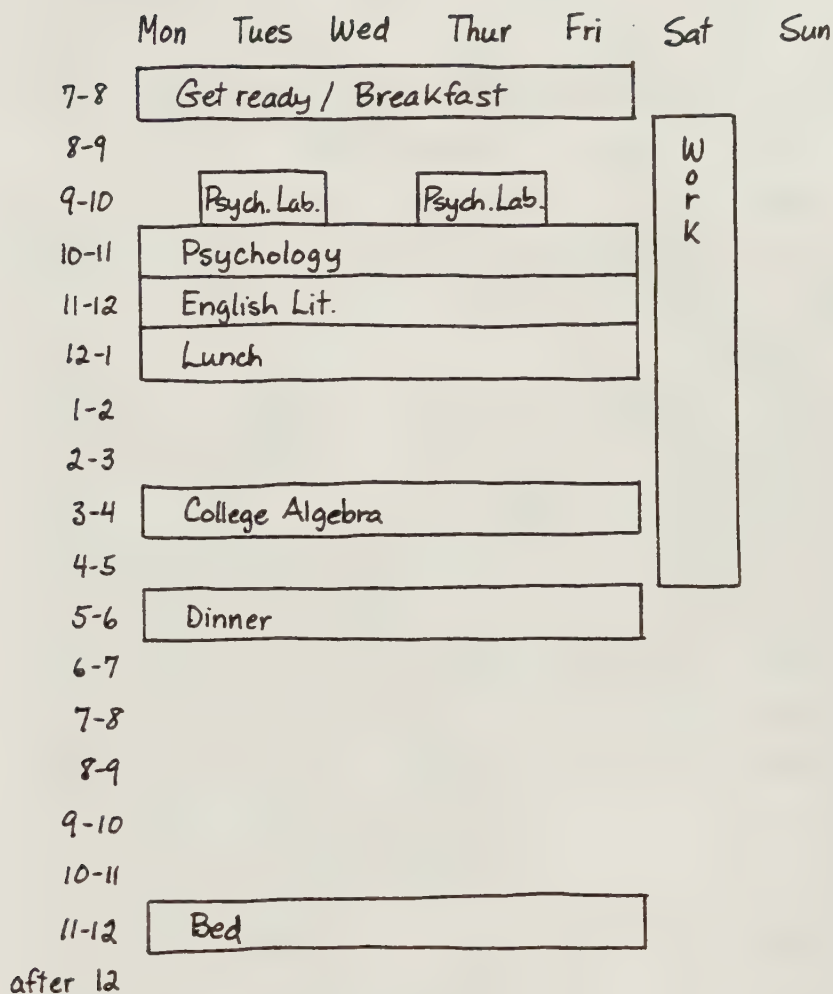


Figure 3.1
Scheduling Blocks of Time

Your final schedule should resemble the one shown in Figure 3.2.

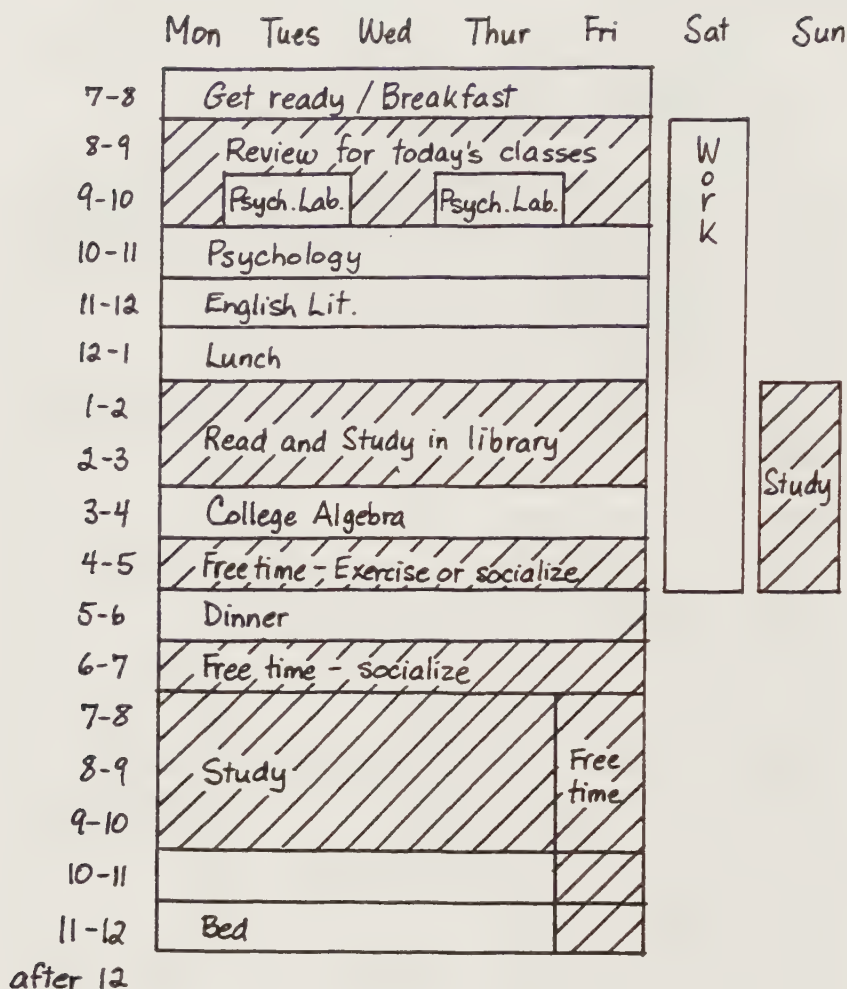


Figure 3.2
Fleshing Out Your Schedule

Just as your term goals should be realistic, your schedule should follow suit. Keep in mind that you are making the schedule for yourself, not to impress someone else. An unrealistic schedule that you have little intention of following serves no purpose. Remember that the aim of the schedule is to help you organize your time more efficiently and effectively so that you can accomplish everything.

After you have made and feel comfortable with your overall schedule for the term, try it out during the first week or so of classes. Determine the shortcomings of your schedule. Is one of your classes considerably easier or

I Understanding College Reading and Studying Demands

harder than you anticipated? Does your boss want you to work additional or fewer hours? Is your recreation time adequate? Are you allowing too much time for play and not enough time for work? After you think about these and other modifications that you need to make, you are ready to prepare weekly schedules.



Time out to socialize and chat with friends should be built into every student's schedule. (David S. Strickler/The Picture Cube)

Weekly Schedules

A weekly schedule is made in the same manner as the term schedule, that is, by blocking out all of your set obligations, and then filling in study time, recreation time, and so forth. The major difference between the two types of schedules is that you can be considerably more specific with the

weekly schedule. For instance, rather than just blocking in study time, you can actually earmark study time for a particular subject or add more time for rehearsing and reviewing several days prior to a big exam.

A few guidelines to help you set your weekly schedule are as follows:

1. On average, you should schedule three hours of study time for every hour of class time. Courses vary greatly in this respect, but if you are unsure about how much time to study for a course, start by scheduling in three hours of study per hour of class.
2. Schedule study time for your hardest courses at times when you are most alert. Everyone has “power periods” when they seem to learn best; use these periods to tackle the most difficult classes.
3. Schedule your study time based on your ability to concentrate. Students have different concentration spans. If you find you can concentrate for 45 minutes at a time, then schedule your time in 45-minute blocks, with a 15-minute break between blocks. The length of each block is not that important, as long as you give yourself enough total time on each course. What is important is that you maintain a high level of concentration during your blocks of study time.
4. If you have a long period of study time, use it to study for different classes. Your concentration will be better if you switch topics every hour or so. How often you switch will depend upon your own ability to concentrate.
5. Set aside time to prepare for lectures. Review the reading for a class right before the lecture on that topic; you will find the lecture much easier to follow. Also, set aside time as soon after a lecture as possible to review your notes, make additions, and apply some study techniques. (These are covered in Chapter 10 on note-taking in lectures.)
6. Distribute your time spent on each class. Your memory of material will be limited if you read the material only once. For example, instead of spending two hours at one time reading and studying material, you should spend one hour today reading, half an hour tomorrow reviewing, 15 minutes the following day reviewing, and 15 minutes at the end of the week reviewing. You will still study a total of two hours, but you will find that your understanding and memory of the information is much greater.

Once you use this initial schedule for a week or two, you will want to make adjustments based on the actual class demands.

I Understanding College Reading and Studying Demands



Your bed is fine for relaxing and reading a book, as this student is doing, but it is not a good place to study effectively. (© Ron Sherman/Uniphoto Picture Agency)

The weekly schedule also enables you to make adjustments for more studying during midterm week, for example, but still allows you to see what you must give up in order to finish all of your needed studying. Look at the weekly schedule in Figure 3.3 and compare it to the term schedule. How are they alike? How are they different?

3 Finding the Time

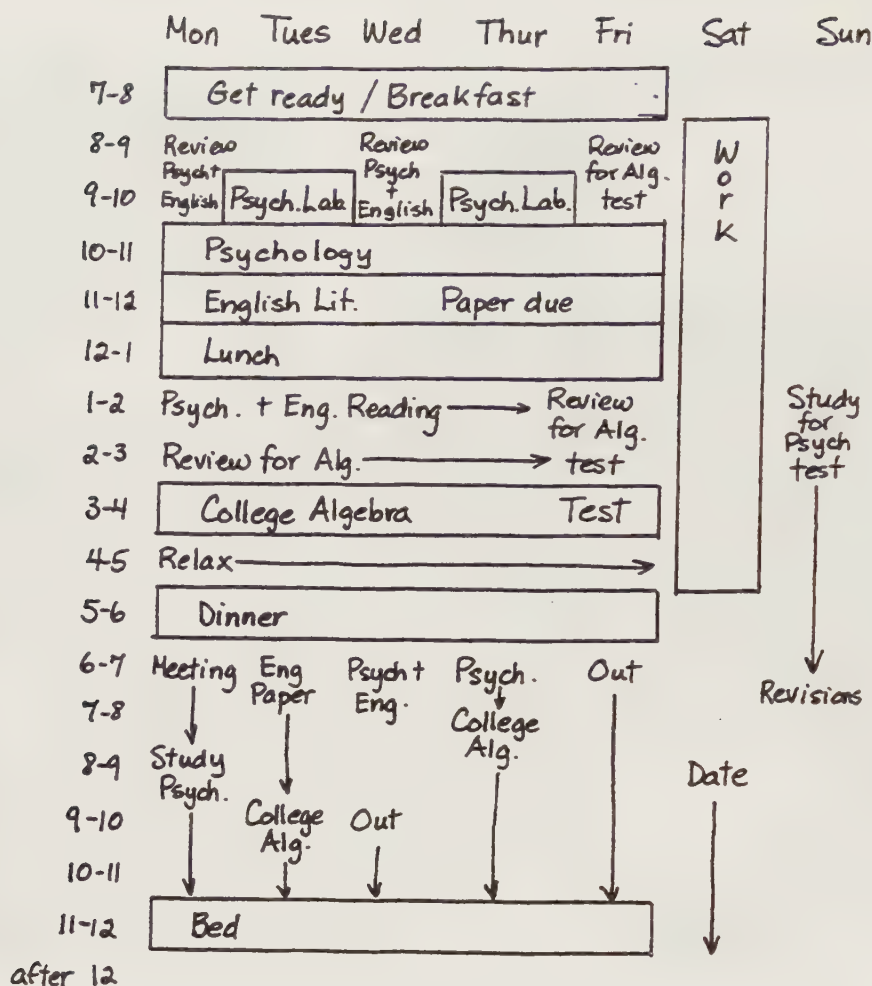


Figure 3.3
Example of a Weekly Schedule

Your weekly schedules should be used in conjunction with your daily "To Do" cards. Remember that the "To Do" cards are very specific about the tasks you need to accomplish on any given day. The "To Do" list is the most specific of the goals and schedules that you set for yourself.

Key Ideas

In this chapter we have seen that, in order to manage your time efficiently and effectively, it is important to set long- and short-term goals. It is also important to construct and stick to an overall schedule. Keep the following ideas in mind when scheduling:

1. In order to be successful in college, you must be self-disciplined.

I Understanding College Reading and Studying Demands

2. At the beginning of each term, set two to four overall goals.
3. Set weekly goals that are related to, but more specific than, the overall goals.
4. Make daily "To Do" lists to help you organize each day.
5. At the beginning of the term, make an overall schedule.
6. Supplement your term schedule with weekly schedules.

Application Exercises (DTT and Your Courses)

1. Before using the blank schedule provided, make several copies. Then, make your term schedule.
2. Each week that you need to modify your schedule, make a new weekly schedule.
3. Set three goals for yourself for this term.
4. Try making "To Do" lists every day for a week. Then write a journal entry about how the lists helped, hindered, or failed to have any influence on helping you to organize your time more efficiently and effectively.

(Name/Section)

WEEKLY SCHEDULE

	SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
6 - 7 AM							
7 - 8 AM							
8 - 9 AM							
9 - 10 AM							
10 - 11 AM							
11 - 12 PM							
12 - 1 PM							
1 - 2 PM							
2 - 3 PM							
3 - 4 PM							
4 - 5 PM							
5 - 6 PM							
6 - 7 PM							
7 - 8 PM							
8 - 9 PM							
9 - 10 PM							
10 - 11 PM							
11 - 12 AM							
12 - 1 AM							

Fill in this weekly schedule with:

- * class hours
- * lab hours
- * work hours
- * recreation hours

Mary Lee Bass, 2001

SEMESTER SCHEDULE _____

(Semester/Year)

MONTH _____

S	M	T	W	T	F	S

MONTH _____

S	M	T	W	T	F	S

MONTH _____

S	M	T	W	T	F	S

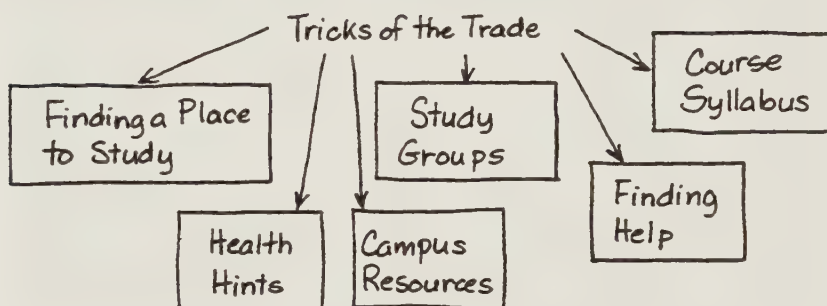
MONTH _____

S	M	T	W	T	F	S

CHAPTER

4

Tricks of the Trade



As you read this chapter, many of you will think, “I know this already.” The information you see here may be familiar to you, but these basics can make the difference between efficient and inefficient learning and, in some cases, between success and failure in college. So even if you think you have heard it all before, read it again, and apply what you read to your studying.

Finding the Place

No matter where you are living—at home, in a dormitory, or in an apartment—one of your first priorities should be to find a place to study that is quiet and free from distractions. You cannot study efficiently with a radio or television playing because your attention will be divided. Part of you will be listening to music or watching television; the other part of you will be studying. Stay away from entertainment during study time.

Your study location should not only be free from distractions but also should have everything you need. Paper, pens, dictionary, books, notes, and the like should be at hand, so that you do not have to get up constantly to find what you need. Try to study in the same place as often as possible. Once you have established a special study place, you can slip easily into a studying

mindset. Your mind will know that once you are in your study place, it is study time, not time for socializing or daydreaming.

Make sure that the lighting is proper and that you sit in a straight-backed chair. You should not be too comfortable! The worst place you can choose for studying is your bed. Go to bed when you are tired, but do not go to bed to study.

Staying Healthy

College students are busy people. Not only do they have to be in class and study hard, but many have numerous other responsibilities. With so much to do, many students find that illnesses become more frequent and more severe. Illness often results from too much stress combined with lack of proper general care for one's health.

Although it is something that your mother has probably said many times, it merits repeating: Every student needs to get enough sleep and to eat properly. However, both eating and sleeping are individual in nature. You might need eight hours of sleep every night and feel grumpy and out-of-sorts if you are unable to get that much sleep. Your roommate might need only six hours of sleep and may feel irritable with more. Likewise, you might need to eat three meals a day at approximately the same time each day, while your roommate does fine eating only when hungry. The important thing is that you find what your body requires to stay healthy, and that you try, as much as possible, to stick with it.

Not only is it important to eat regularly, but you also must eat properly. Many college students exist on a diet of fast food. More often than not, such food is high in fat and calories and fails to provide sufficient nutrition. With so much information available about the perils of such a diet, you should indulge in fast foods only occasionally and should try to eat more vegetables, fruits, and whole grains.

Another aspect of staying healthy is getting adequate exercise. College students engage in a number of sedentary activities. You sit in class. You sit when you study. You sit when you go to meetings. Some form of aerobic exercise is necessary, not only for a healthy body, but also for a healthy mind. One suggestion that we often give to students is to engage in some form of exercise during their study breaks. Taking a brisk walk, jogging, playing basketball, or cycling seem to do wonders to rejuvenate the body and the spirit. The right kind of exercise should make you neither hungry nor tired. Instead, it should give you a feeling of well-being that encourages studying.

Even though you may eat properly, get sufficient sleep, and engage in some form of exercise, there are times when you simply will not be able to ward off illness. In such cases, see a doctor or go to the campus infirmary as soon as you realize that you are not feeling well. Often an early visit to the doctor can provide you with medication or treatment that will shorten or

lessen the severity of your illness. Students who lie in bed for several days waiting to recover on their own usually end up seeing a doctor in the long run. Students who wait often miss considerably more class time than those who seek early assistance.

Utilizing Resources

College campuses have many resources available to help students succeed in their classes. Often these resources go unnoticed, or students fail to take advantage of them. Some resources are more obvious. The library, of course, is a must when it comes time to write papers or do outside research. But on many campuses, there is a wealth of additional information nestled in the library. Many libraries keep test files in which instructors can place retired test copies. Such tests, though not the exact test you would take in that class, indicate the kinds of items that the professor might stress, how long the test might be, and the ratio of text to lecture items. Armed with this kind of information, test preparation can be carried out more effectively and efficiently.

Another way to find more information about courses and professors is to ask other students who have taken a particular course or studied under a professor. Word travels fast on both large and small campuses about instructors who tend to be either very good or very poor. Although sometimes you may not have extensive choices about the course or the instructor, when you do, make it a policy to check around. But also remember, the “easiest” professor isn’t necessarily the best choice. Weigh all the reasons for taking the course before deciding.

Forming Study Groups

Some of you may remember the now-defunct television show called “The Paper Chase” which purported to give a fairly accurate picture of the trials and tribulations of law students. Others may personally know law students and can better understand the academic rigors they face, particularly during their first year. One of the ways law students manage to meet the studying demands placed on them is by forming study groups. If it works for them, it might work for you also.

Study groups are an efficient way to learn in a variety of situations. Most students only think of forming a study group in classes where the reading/learning demands are too heavy for them to handle effectively on their own. Then, they organize by forming a study group of two or more students who all want to do well in the course. The tasks are equally divided among group members. For example, if you were in a political science class in which the instructor assigned 150 pages of reading weekly, you might form a study group consisting of three students and divide up the load evenly—50 pages

per person. Each person would be responsible for thoroughly reading and “teaching” their part to the other members of the group. In addition, members of this type of study group would usually be responsible for summarizing the information on paper in some way. This summarization could take the form of a map, an outline, or a more traditional paragraph summary.

But study groups can be formed for other reasons. Students enrolled in courses where the reading load is light or moderate can also use the idea. These groups are generally smaller, often consisting of only two individuals who meet on a regular basis to “talk through” key ideas presented in lectures, texts, and/or outside readings.

No matter which type of group you might form, there are several points that you should keep in mind in order for all members of your group to be successful:

1. Invite individuals to participate who are serious about learning and will do their fair share of the workload. Nothing makes group members angrier than one member consistently showing up without having his or her task completed. Remember, if one member of the group fails to carry out his or her obligation, the rest of the group suffers.
2. Devise consequences for those who fail to meet their obligations. For example, individuals who come unprepared might be banned from attending one or two subsequent sessions. Other group members can pick up their share of the work during their absence.
3. Set up a regular time to meet, as well as a specified meeting place. When you set up a regular time, you can include it on your weekly schedule and on your daily “To Do” list. Just as with other meetings, once you become accustomed to attending, you will feel guilty if you don’t.
4. Study groups should be serious studying/learning situations, not social events. If you want to socialize with members of your group, do it at another time.
5. Study groups do not take the place of individual preparation and studying. They are supplements to, not exclusive of, individual study time. In a study group where you are responsible for teaching one-fourth of the material to the group, you must still read the other three-quarters. Your study partners may supply you with detailed strategies that outline the important points of the material, but you should be at least familiar with all of the information when you attend the meeting. Likewise, if your group or partner meets to talk through course information, don’t show up totally unprepared and expect others to spoonfeed you the materials.

Forming a study group is rather simple. Find two or more people who are interested in doing well in the course. In a sense, it works better if you are not friends with the other members. Groups that are the most successful often consist of people who do little together socially. That way, when you get together, you tend to study and learn rather than to socialize. Next, find a quiet place to meet, as well as a time that suits all members. Some study groups meet once a week; others find that they need two to three sessions

per week to complete all of the work. Finally, divide up the workload and decide a format for the strategies each member will devise or for the way in which “teaching” sessions will be carried out. Keep focused on the task, and begin and end on time as much as possible.

If formed and used properly, study groups or study partners are effective tools. You have a chance to hear someone else’s interpretation of the material, as well as a chance to have the information filter into your memory by ways other than just reading it. In addition, such groups help clarify fuzzy information. Many times students respond to an explanation by a peer better than they responded to the way the text or the instructor presented the information. It is a reciprocal method of learning. In other words, you are teaching me; I am teaching you. And we both are gaining something positive from the arrangement.

Getting Assistance

Once you learn and use the strategies outlined in *Developing Textbook Thinking*, you should see a marked improvement in your test grades. However, sometimes, in spite of all of the strategies you might try, your grade might not be as good as you would like. In such cases, seek help early. Students who do poorly on the first test and who procrastinate about asking for assistance often find themselves in situations where it is difficult to regroup. For example, individuals who have failed the first two of only four course tests are in academic hot water that is difficult to tread.

If you are working hard to understand the course material, that is, you are keeping up with the reading, doing the assignments, using good study strategies, and budgeting your time adequately without a positive effect on your grade, don’t be afraid to ask for assistance.

The first place to start is with your instructor. See her either before or after class to set up an appointment; do not go into any detail as to the nature of your problem at that time. Simply ask her when it would be convenient for you to see her. Before you go to her office, make sure you have thought about what you want to say. Comments like “You expect too much from us,” or “The reading load in this course is just too heavy,” usually receive unsympathetic responses. Rather, explain to the professor why you are concerned and what you have been doing in an attempt to help yourself. Chances are that she will either personally give you some help or that she can steer you in the direction of another person who can. Most instructors stand ready to assist students who are trying hard. But don’t expect sympathy if you are not attending class and making a valiant effort at trying to understand the material on your own.

In addition to the course instructor, you might seek out the college’s Learning Assistance Center. Most campuses offer some degree of learning help in the form of tutors for traditionally difficult courses. Additional help

on how to study, as well as counseling services, are also offered in traditional learning assistance centers. Your advisor or your instructor should be able to point you toward the services available on your campus. Usually, these services are free of charge.

Using Your Course Syllabus

The last bit of information in this chapter has to do with using and understanding course syllabi (*syllabi* is the plural of *syllabus*). In high school, most teachers do not distribute a course syllabus, so many freshmen are not familiar with the nature and purpose of a course syllabus. In a sense, the course syllabus is a contract between you and your instructor. It generally outlines what the professor expects of you both in and out of the classroom. Most syllabi indicate what you should be responsible for in terms of reading the text, when tests will be given, how grades will be determined, and any specific policies that instructors might have in terms of absences, test retakes, and academic dishonesty.

Many professors feel that once they have given the syllabus to you it becomes your job to keep abreast of the requirements. For example, few professors will remind you of weekly reading assignments once they have distributed the syllabus. Most will still remind you of test dates, study sessions, and when major requirements such as term papers are due. However, some do not. The final warning here is to read the syllabus carefully and make sure that you understand the expectations. Ignorance of the law is no excuse!

In this chapter, we have tried to outline some preventive measures that might help you avoid some of the pitfalls beginning college students often encounter. Being aware of such pitfalls and understanding how to handle them if they occur can assist in a smooth transition into college life.

Key Ideas

1. Find a quiet place to study that is free of distractions. Consistently study in the same place.
2. A balanced diet, adequate sleep, and exercise help maintain a healthy mind and a healthy body.
3. Avail yourself of campus resources.
4. If you form a study group or have a study partner, learning can be more efficient and effective.
5. Seek assistance early if you are having problems in a course.
6. Use your course syllabus to better understand course expectations.

Application Exercises (DTT)

1. How might you go about forming a study group? What would be most important to you in forming such a group?
2. What resources are available on your campus that will provide additional academic assistance to those who need it? Share this information with your classmates.

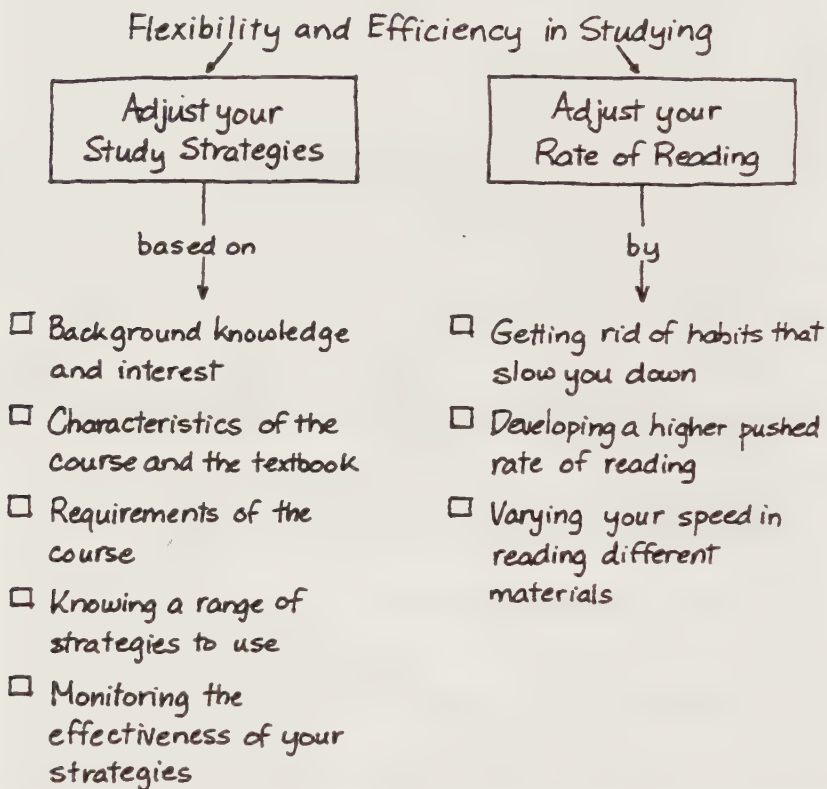
Application Exercises (Your Courses)

1. Examine the course syllabus from a class you are presently taking. What information is included on the syllabus? What information is missing? From reading the syllabus, do you know:
 - (a) weekly reading assignments?
 - (b) when tests are given?
 - (c) how your grade is determined?
 - (d) your instructor's office hours?
 - (e) course policies?
2. For which of your present courses would you consider forming a study group? How would you form it? What factors would be most important to you when forming this group?
3. What resources are available on your campus to provide you with additional academic assistance should you need it?

CHAPTER

5

Flexibility and Efficiency in Studying



In earlier chapters, we discussed becoming aware of reading and studying habits and developing ways to have the motivation, the time, and the organization to study effectively. There is another important aspect of efficient and effective studying—flexibility.

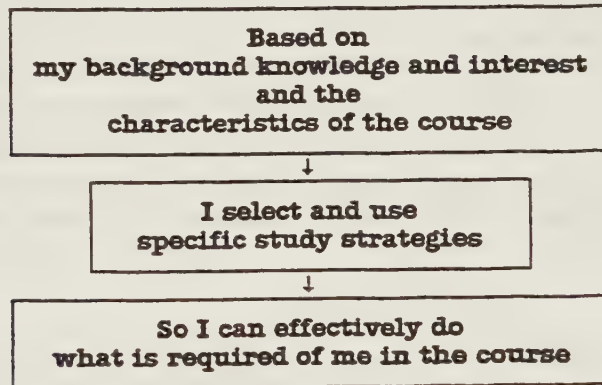
Flexibility in studying includes:

- adjusting your reading speed
- deciding what kinds of information to isolate and learn
- deciding what kinds of study strategies to use with the textbook and with the lectures and discussions
- asking yourself different types of questions in preparation for a test
- deciding how often to review

Flexibility allows you to spend more time, with more intensive study strategies, on the classes that are hardest for you. You can do this by spending less time and energy on the classes that you find easy.

To be flexible, you have to adjust your reading and study strategies to each task. So you need to have several strategies from which to choose. In the next sections of this text, we will cover a variety of strategies in reading, studying, note-taking and test-taking. As you learn more of these strategies, you will be increasing your ability to be flexible.

In addition to having a range of study strategies, being flexible requires you to assess your own background knowledge and interest. You also have to consider the types of studying required by the textbook, the lectures, and the written papers or tests. The following diagram maps this idea for you:



Background Knowledge and Interest

How much background knowledge you have in a subject affects how easy or difficult a course will be for you. We don't learn new information in a void or from scratch; we learn it by linking new information with information we already know. The more you know about a topic, the fewer new linkages you have to make and the easier it is to make the new linkages.

As an example, suppose you read a newspaper account of a basketball game. If you know a great deal about basketball, you already knew the rules

in detail, the teams that played, who the key players were and what you might expect them to do. All you had to learn was who won, by how many points, and what the key plays were. You could read the article very quickly—by skimming over what you knew already and reading only the information about that particular game.

On the other hand, if you only knew a little about basketball, you might have to learn the team names and the player names in addition to who won and how. This would be slower reading, and there would probably be more new information than you could learn by reading the article only once.

If you know *nothing* about basketball, the article might prove impossible to read. You might have to ask someone for information or read about the rules and scoring before you could make sense of the article. And even then, it would take several readings and some study to learn as much as our first reader knew just by skimming the article.

Authors make assumptions about the amount and type of background information their readers have. If you have more background knowledge than the author of a textbook assumes, the book will be easy to read and study. If you have less background knowledge, the book may be very difficult, unless you can use similar, related knowledge to help you. In either case, you only can make use of your background knowledge if you:

1. determine what type and amount of background information the author assumes you have; and
2. call the appropriate background knowledge to mind before you start reading so you can use it to link the new information in your memory.

Chapter 6, on strategies to use before you read, discusses ways to bring your background knowledge to mind. The next part of this chapter will help you determine what the author expects by looking at the typical characteristics of textbooks.

Characteristics of Textbooks

In addition to using your background knowledge, having knowledge about differences among textbooks from a variety of disciplines is also important because it promotes effective and efficient learning. As you take different courses in college and read the required texts, you will notice some basic differences among them. The selections in this textbook are representative of texts in the social sciences, biological sciences, and humanities. Actually, even within each of these three areas, textbooks have differing characteristics. Some examples of academic disciplines and subdivisions of those disciplines include the following:¹

¹ The categorization system we suggest is certainly not the only one you might use. Differences among texts do exist, and those differences affect the choice of study methods.

5 *Flexibility and Efficiency in Studying*

HUMANITIES

Language
Literature
Philosophy and Theology
Fine Arts
 Architecture
 Theater
 Art
 Music

SOCIAL SCIENCES

Social Orientation
 Sociology
 Social Work
 Psychology
Business
 Economics
 Accounting
 Business Administration
Study of Ancient Humans
 Anthropology
 Archaeology
Education
Political Orientation
 Law
 History
 Political Science

PHYSICAL SCIENCES

Exact Sciences
 Mathematics
 Physics
 Chemistry
Biological Sciences
 Biology
 Agriculture
 Medicine
 Forestry
 Botany
 Zoology
True Physical Sciences
 Astronomy
 Engineering
 Geology

trusted in several ways. The following sections compare humanities, social science, and physical science texts in six different areas:

- new terminology
- major ideas and emphases
- text organization
- use of typographical aids
- assumptions about background knowledge
- tests

New Terminology

Humanities texts (and especially literature texts) tend to have little new terminology. The texts do, however, present difficulties in understanding dialects, foreign expressions, and archaic (old or outdated) usages of words. The texts also use words in symbolic or metaphoric ways, and interpreting the symbolism can pose problems for many students.

In social-science and fine-arts texts, familiar words may have new and specialized meanings. This tendency can create problems, because you may already know one general meaning for a word (such as *class* or *mobility*), and therefore you may think that you know the new, specialized meaning when you really do not.

Physical-science texts tend to introduce new terms and new definitions. This tendency creates a double demand on your memory. You also may have problems if the textbook authors later use the new words in defining other words. If you didn't learn the first word, you will have trouble understanding later terms.

Major Ideas and Emphases

Humanities texts, especially literature texts, tend to stress such points as the author's purpose, symbolism, characters, and the mood or tone of a selection. These topics are rarely stated directly in the selection and must be discovered by the student.

Social-science texts tend to stress particular theories or slants with supporting evidence. Because it is so difficult to prove much about people and social institutions, social scientists rely on theories about what happens in a society. Social-science texts can often confuse students about what is fact and what is theory or opinion.

With physical-science texts, proven principles of basic importance and well-researched (but not proven) theories tend to be stressed as facts.

Text Organization

In humanities texts, especially literature texts, information is usually presented in story, drama, essay, or poem format. The text may be organized by

time period, type of literature, themes of literature, or regions of the world. Generally, few instructional aids (such as graphs, charts, or diagrams) are used.

Social-science texts are often topical; the text, or its chapters, are divided into topics and subtopics of roughly equal importance. You could open many texts to, say, Chapter 12 and read it as easily as Chapter 1, because each topic stands on its own. Other social-science texts follow some other logical order. For example, history texts may follow chronological order. Political-science texts may be organized according to the regions of a country. In such cases, you need information from previous chapters in order to understand the chapter you are presently reading. Social-science texts also tend to use headings, subheadings, italicized words, and other typographical aids to help you follow the author's organization of the material.

Science texts are almost always sequential. You have to study chapters in a particular order, because one chapter in a section usually builds on the one before. Science texts may present broad concepts and then elaborate on specific areas, or they may present specific information that leads to broad concepts. These texts also use many headings, subheadings, and italicized words.

Use of Typographical and Instructional Aids

Typographical aids, such as headings, subheadings, and italicized words, are learning signposts. These signposts traditionally are used to make learning easier. Examples of instructional aids are charts, graphs, photographs, and diagrams, all of which summarize information or present new information more clearly than a textual description alone could have.

Humanities texts rarely use charts, graphs, or diagrams, but they often use photographs. Even then, the pictures usually are included to set a tone, to build interest, or to illustrate something in the text. The pictures rarely present new information and thus are not too important in studying. Other humanities texts, such as the sample chapter, "The Stormy Sixties," in the Appendix, assume that you have some knowledge of the sequence of historical events.

Social-science texts use all of these aids at one time or another. In many texts, they serve to create interest or to illustrate graphically some point in the text. In such cases, they are not vital to study. In other cases, such aids add new information or summarize information from the textual discussion. In these instances, you should study these aids.

Many instructional aids are used in physical-science texts. These aids almost always are used to present additional information or to summarize a great deal of text information (for example, a diagram of an amoeba can summarize two pages of description). In science texts, you should study these aids carefully, in order to understand the material thoroughly.

Assumptions About Background Knowledge

Literature texts typically assume that you have some knowledge of the basic structure of stories, essays, plays, and poems. More importantly, they often assume that you are able to determine the symbolism used, to recognize figurative language (such as metaphors and similes), and to interpret the author's purpose, tone, or mood. Literature texts sometimes assume that you learned these skills in high school. If you did not, you may find literature texts difficult to read and comprehend thoroughly.



If you have developed good habits, you can study effectively, even on an early spring day that demands your participation! (Pat Beringer/The Image Works, Inc.)

Social-science texts assume that you have some understanding of how people and societies function. Authors assume, for example, that you can

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read a one-sentence definition of “social stratification” and understand what is meant because you have experience with living in a society. In some cases, an author assumes that you know what was covered in a previous chapter or course. They also assume that you can distinguish between theories and proven facts.

Physical-science texts tend to assume that you have a working understanding of scientific inquiry. They assume that you know how basic laws, facts, and principles are discovered and that you understand the relationship between basic principles and their supporting proofs. In addition, authors typically assume that you have background knowledge from previous chapters in their book, from high-school courses, or from other college courses. These assumptions make reviewing a vital part of studying scientific material. Finally, science texts assume that you can quickly decode new and unusual words and understand their meaning. Authors often use a new word in the very next sentence to define yet another word.

Tests

Many humanities tests, but not all, use essay questions. At the beginning of the course, ask your instructors what type of test they plan to give.

Social-science tests tend to be a combination of multiple choice, short answers, and essay. Again, ask your instructors for particulars.

Science tests tend to be multiple choice, short answers, or labeling, because in science courses, the stress is on facts and exactness. Here again, check with your instructor.

CHART OF DISCIPLINES

	NEW TERMS ✱	TEXT ORGANIZATION	USE OF INSTRUCTIONAL AIDS ✱	TYPES OF TESTS ✱
HUMANITIES Literature Art Music Philosophy	few new terms ***** use of symbolism and metaphors	may be organized by time period, type of literature, themes, regions of the world	rarely use charts, graphs, diagrams; but often use photos	essay tests are often used
SOCIAL SCIENCES History Sociology	familiar words with new meanings	topical (chapters in topics & subtopics)	generally use all of the various types (headings, subheadings, charts, graphs, etc.)	combin- ation of mult. choice, short answer, & essay
PHYSICAL SCIENCES Biology Chemistry Engineering Math	new terms and new definitions	sequential - one chapter builds on the one before	many aids used to present additional information or to summarize large quantities of text; ***** should study these aids carefully	tend to be mult. choice, short answer, & labeling

Adapted from Nist & Diehl (1990) by Mary Lee Bass

Application Exercises (DTT)

1. Use these selections from the Appendix to complete the exercises at the end of this section.

- (a) “The Stormy Sixties” (pages 229-248)
- (b) “The Modernist Movement” (pages 250-258)

Preview each text selection by applying these steps:

- (a) Read the title.
- (b) Read the headings and subheadings.
- (c) Skim and look for italicized or underlined words or phrases.
- (d) Look at any pictures or figures and read the captions.

While previewing, try to answer the following questions, because each worksheet is organized around these topics:

- What is difficult about this selection?

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- How is the material organized?
- How is the information conveyed?
- What prior knowledge would you need in order to read and study the selection?
- What types of questions would you expect from such materials?

After previewing and skimming each selection, complete the Application Exercises at the end of this section. Keep in mind that your answers to the questions on these exercises should be based on your familiarity or unfamiliarity with each topic, as well as on the actual presentation of the topic. Each exercise will have different answers, which reflect the differences among the three major kinds of texts.

Application Exercises (Your Courses)

Use the first 10 to 15 pages of one chapter from each of your textbooks to complete the following exercises at the end of this section.

Preview each text selection by applying these steps:

- (a) Read the title.
- (b) Read the headings and subheadings.
- (c) Skim and look for italicized or underlined words or phrases.
- (d) Look at any pictures or figures and read the captions.

While previewing, try to answer the following questions, because each worksheet is organized around these topics:

- What is difficult about this selection?
- How is the material organized?
- How is the information conveyed?

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- What prior knowledge would you need in order to read and study the selection?
- What types of questions would you expect from such materials?

After previewing and skimming each selection, complete the Application Exercises at the end of this section. Keep in mind that your answers to the questions on these exercises should be based on your familiarity or unfamiliarity with each topic, as well as on the actual presentation of the topic. Each exercise will have different answers, which reflect the differences among the three major kinds of texts.

Application Exercises for Textbook Characteristics I

Chapter Title: _____

Check the items that describe this textbook selection. Try to give one specific example for each item checked.

1. What is difficult about this passage?

_____ Unfamiliar terms; uses dialect

Example: _____

_____ Terms I am familiar with that have specialized meanings

Example: _____

_____ Lots of new terms or ideas introduced rapidly

Example: _____

_____ General descriptions that are hard to understand

Example: _____

_____ Very specific descriptions that are hard to memorize

Example: _____

_____ A need to understand symbolism

Example: _____

_____ Pictures or figures difficult to understand

Example: _____

_____ Other (specify) _____

2. How is the material organized? What kinds of typographical or reading aids are given?

_____ Headings and subheadings

Example: _____

____ New terms italicized

Example: _____

____ New terms underlined

Example: _____

____ Figures used to illustrate points

Example: _____

____ Other (specify) _____

3. How is the information conveyed?

____ Chronologically (by time)

Example: _____

____ From large topics to smaller topics

Example: _____

____ Different sections on topics of equal importance

Example: _____

____ Typical story format

Example: _____

____ Uses primarily explanation

Example: _____

____ Uses scientific proofs

Example: _____

4. What would you need to know beforehand to read and study such a selection?

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5. What types of questions would you expect to cover such a passage?

- ☐ (a) Multiple choice
- ☐ (b) True-false
- ☐ (c) Short answer
- ☐ (d) Essay
- ☐ (e) Questions testing for knowledge that a person can memorize
- ☐ (f) Questions testing how well a person can use what he or she has learned

Write one question that you predict could be used on a test covering this selection:

TEXTBOOK AWARENESS

It is important to become aware of various components of your course textbooks in order to familiarize yourself with the scope and sequence of the course. Select one of your current textbooks and respond to the following items.

1. Textbook Title: _____

2. Textbook Author: _____

3. Publisher's Name: _____; City, State: _____

4. Publication Date: _____

5. Indicate items listed which are included within your text.

- | | |
|--|---|
| <input type="checkbox"/> Preface | <input type="checkbox"/> Appendix |
| <input type="checkbox"/> Table of Contents | <input type="checkbox"/> Index |
| <input type="checkbox"/> Unit Titles | <input type="checkbox"/> Glossary |
| <input type="checkbox"/> Chapter Titles | <input type="checkbox"/> Reference List |
| <input type="checkbox"/> List of Tables,
Diagrams, etc. | <input type="checkbox"/> Chapter Introduction |
| <input type="checkbox"/> Graphic Organizers | <input type="checkbox"/> Headings |
| <input type="checkbox"/> Marginal Text Notes | <input type="checkbox"/> Subheadings |
| | <input type="checkbox"/> End of Chapter Questions |

6. Preview the Table of Contents. In depth, look at one (1) specific chapter in the Table of Contents. Predict what you think this author intends to discuss and cover in this chapter. Write your prediction in one (1) sentence. This chapter will be about

7. Locate a book with an appendix (our textbook has several). Why does an author include an appendix? What type of material is included in this part of a textbook?

Developing Reading-Rate Fluency and Flexibility

Most people, including students, read all material—magazines, novels, and textbooks—at the same rate of speed. This practice is both a waste of time and inefficient. Because 85 percent of all courses in college involve reading, it is advantageous for students not only to increase their reading rate but also to develop some flexibility in their rate.

It is a fallacy that the more slowly you read the more you comprehend. In fact, reading very slowly can *inhibit* comprehension rather than enhance it. Think of it this way: If you are reading only 100 to 150 words per minute, you are reading less than a word at a time (a rate that is even slower than you speak); it takes extra work for the brain to make sense of the incoming visual stimuli, and you also may forget the start of a passage by the time you get to the end.

The concept of reading rate, then, actually encompasses two related but not identical issues—flexibility and fluency. Flexibility is the ability to adjust your rate to the kind of material you are reading. You should read magazines more rapidly than your biology text, for example. Flexibility is also the ability to vary your rate throughout a chapter. You may read easier material or material in which you have adequate background knowledge relatively quickly, and you may read difficult or unfamiliar concepts within that same chapter more slowly.

Fluency, in contrast, means increasing your rate while enhancing your comprehension. It makes little sense to “read” 400 words per minute and yet only understand 40 percent of what you have read. In developing reading fluency, rate and comprehension go together.

Reading slowly and reading all types of materials at the same rate are generally bad habits and, therefore, can be broken with effort and practice. While we do not intend to teach “speed-reading” in this book, we will discuss some of these bad habits and ways of breaking them. We will also suggest ways to increase your speed in reading easy materials. With practice, this should give you one more tool for being flexible in your studying.

Reading Habits That Slow You Down

Several common problems inhibit reading rate. These problems, fortunately, are relatively easy to correct. Think about what you do when you read silently to see if you do any of these things.

Do You Lip-read?

Lip-reading means taking time to form each word with your lips. If you lip-read, you are not reading any faster than you speak. To correct this problem, place your finger lightly on your lips while you are reading. You can cure yourself of lip-reading by making a conscious effort to hold your lips still. Sometimes people move their lips while reading a passage that is extremely difficult to comprehend or when their concentration is poor. If you lip-read only infrequently, you should still try to eliminate it completely, but your problem is less serious than that of the person who lip-reads all the time.

Do You Subvocalize?

Subvocalization occurs when you partially activate your vocal cords during reading. Subvocalization means forming words in your throat rather than with your lips. In order to determine if you habitually subvocalize, put your fingers lightly on your throat as you read silently. If you feel vibrations, you are a subvocalizer. To correct this habit, keep your fingers on your throat as you read, and make a conscious effort not to form the words in your throat. As long as you subvocalize *every* word, you cannot read any faster than you speak. To be flexible, you need to be able to move faster in some materials and to look for only key words or phrases.

Do You Regress During Reading?

Regression is the process of going back and rereading a word, phrase, or sentence that you thought you missed the first time through. Because information is usually repeated, regression is rarely necessary. Although infrequent regressions do not slow reading rate very much, readers who habitually regress often lack confidence in their ability to comprehend. Regression is by far the most difficult habit to break. People with this habit tend to lose their concentration easily, because they are programmed to go back and reread. You can prevent yourself from regressing excessively by running your finger under the line of print as you read or by using a notecard as a marker and moving it at a steady pace down the page.

Regressions often result from losing concentration when you read. Some of the techniques in the next section will help you maintain concentration. For many students, losing concentration has simply become a bad habit. They haven't trained their minds to comprehend information the first time because they know they can—and do—always go back and reread. Have you ever been looking at a textbook and realized you have “read” several pages but haven't gotten anything out of it? So you go back and reread those pages. If this happens to you often, you've developed a bad habit and are losing lots of valuable study time.

An effective technique for eliminating this bad habit involves gradually decreasing the problem. Keep a piece of paper by you when you read. As soon as you realize you've lost concentration, make a mark on the paper. You might have 25 marks for the chapter you read today; try to have only 23 marks tomorrow, 20 the next, and so on. By marking down regressions this way, you will find that you do begin to decrease the number of times they occur. You will also find you become aware of losing concentration much sooner—you won't "read" several pages before realizing your concentration has been broken. Thus, this technique helps you decrease both the number of times you regress and how much you have to regress each time.

Do You Move Your Eyes at One Speed?

Another habit that slows readers down occurs when they move their eyes from left to right across the line at a certain speed, and then move their eyes *at the same slow speed* from right to left, down to the beginning of the next line. When you go from one line to the next, of course, you aren't reading anything; you're just waiting (even for a second) for your eyes to get to the next line. Waiting interrupts your comprehension of the material, and it may break your concentration. At the least, you are slowing yourself down.

To see if you have this habit, time yourself as you read a page of text in your normal way. Then read another page that is from the same source and is about the same length. This time, purposefully move your eyes as quickly as possible from the end of each line to the beginning of the next. Then read the next line at your regular speed. (Don't worry if you lose some comprehension at this point: your mind is busy thinking about a "fast return-sweep.") Time yourself using this fast return-sweep and see if you read the second page more rapidly. Some of our students found that their reading speed doubled if they just increased the speed of the return-sweep. Not only did they save time in the

return-sweep, they also found that they moved more quickly across the lines they read because they had a sense of momentum.

To work on breaking this slow-return-sweep habit, practice increasing the speed of your return-sweep. Practice on materials that are light reading for you. Most students find that their comprehension decreases at first, but once they develop the habit of a fast return-sweep and stop thinking about doing it, their comprehension returns to its normal level. You are replacing a bad habit (going between lines as slowly as you read across lines) with a new, efficient habit (a fast return-sweep).

Strategies to Increase Fluency

Most speed-reading techniques are based on two facts about reading and readers: First, our eyes can see clearly and our minds can comprehend more than one word at a time. Second, written material almost always conveys meaning in phrases, not in single words; within phrases (or chunks of meaning), some words are more important than others.

Fast reading involves taking advantage of these two facts by using several techniques. The three strategies we have found to be easiest and most helpful in quick reading are *increasing the speed of your eye movements*, *key-word reading*, and *phrase reading*. Although these three strategies are basically the same—they all involve reading chunks of meaning rather than each individual word—we have found that different strategies work for different students. Try out each strategy to see which works best for you. Then use that strategy in your speed-reading practice.

Increasing the Speed of Your Eye Movements

When you read, your eyes do *not* move steadily across a line. (If you doubt this, watch people's eyes move when they read.) Instead, your eyes jump from point to point across the line. At each point, they stop and focus ("fixate") so you can read. A very slow reader stops and focuses on every single word. By putting a dot where the eye fixates, we can show how this slow reader goes over a line of text:

A very slow reader stops and focuses on every word.

.

You can increase speed by expanding the number of words you focus on at one time (increasing your "eye-span") and by stopping and focusing less frequently (decreasing your "fixations"). First, try focusing on two words at once:

A very slow reader stops and focuses on every word.

.

Your eye-span is about twice as great and your fixations are half as many. Then, focus on three or four words at once:

A very slow reader stops and focuses on every word.

We have found that three or four words per fixation is the maximum for most students just beginning to use this technique.

Try this strategy on Part 1 of the article about Malcolm X at the end of this chapter. Start by reading the way you normally do. Then, after a paragraph, start fixating on pairs of words. Then, after a few paragraphs, start fixating on three or four words at a time. When you have finished, jot down the main ideas of the article. Your comprehension probably decreased as you increased your eye-span. This is normal because you are focusing on the mechanics of moving your eyes. As you continue to try this strategy on materials, however, and the mechanics become a habit, your comprehension will increase.

Key-Word Reading

With the previous strategy you may have found that you focused on, and read, key words. *Key words* are the words in a sentence or phrase that carry the meaning. (Key-word reading and the key-word method of memorizing information that was presented in Chapter 5 are not the same.) Other words signal the key words (for example, *the* has no meaning; it signals that a noun—a key word—is coming up in the text).

Key-word readers say the key words to themselves. Students who tend to subvocalize often find key-word reading to be the most effective method because they can still subvocalize some of the words. A key-word reader might subvocalize the example sentence like this:

A very (slow) (reader) (stops) and (focuses) on (every) (word).

or like this:

A very slow (reader) (stops) and (focuses) on every (word).

Try this exercise: Quickly read through the following paragraph¹ and circle the key words.

About a year ago, as Spike Lee tells it, he was setting up a rally scene for “Malcolm X” on a Harlem street when an empty car suddenly came hurtling toward him and his crew. Although the car crashed before injuring anyone, its interior chilled the blood. “Someone,” says Lee, “had tied a brick to the accelerator and gunned it in our direction.” No one ever found out who-dunit—but talk about symbolic moments. If getting a movie made sometimes resembles the art of war, the making of this film was a two-year display of Spike Lee’s audacity, ingenuity and sheer endurance.

Which words did you circle? You probably circled nouns, verbs, and some of the adjectives and adverbs. The words you circled are probably the longer words. Compare those you and other students circled. You probably circled many, but not all, of the same words.

When you key-word read, you quickly go through the passage and subvocalize only those words you perceive as key. The trick in key-word reading is that *your eyes see* and *your mind reads*—without subvocalizing—the words that *surround* the key word. So it doesn't make a difference if you identify the same key words as another student. It only matters that you identify and subvocalize enough key words to comprehend the meaning of the material.

Try this strategy on Part 2 of the article about Malcolm X at the end of this chapter. Begin by reading in your normal way. Then, after a paragraph, start key-word reading. If, after another paragraph, you feel that you are losing too much comprehension, slow down and read more key words. If, on the other hand, your comprehension seems fine, speed up and read (subvocalize) fewer key words. When you have finished, jot down the main ideas of the article.

Phrase Reading

Phrase reading is very similar to key-word reading. In fact, when you key-word read, you are probably reading phrases; you subvocalize the key word and your eyes and mind simultaneously process the words next to the key word and complete the phrase. This occurs because your mind is always trying to make sense out of things. In written language, the sense—the meaning—is carried in phrases or chunks.

We could divide our example sentence into meaning chunks like this:

A very slow reader | stops and focuses | on every word.

or like this:

A very | slow reader | stops and | focuses | on every word |.

Try this exercise: Quickly scan through the following paragraphs² and put a slash mark at the end of each phrase (or each meaning chunk).

Upon winning the director's job after a public campaign arguing that Malcolm's story could be filmed only by an African-American, Lee found himself under attack from black nationalists who questioned his ability to portray their hero correctly. Nation of Islam head Louis Farrakhan was most concerned about how the film would treat spiritual leader Elijah Muhammad, from whom Malcolm X broke after a bitter dispute. "I will wait and see what is done and how it's done," Farrakhan told Lee.

Meanwhile, the director clashed with his studio, over both the epic length and the budget. Lee wanted \$33 million; Warner Bros. agreed to put up only \$20 million. After picking up \$8 million more by selling the foreign

rights, Lee began shooting, hoping that Warners would make up the shortfall. When it didn't, and the project went \$5 million over budget, the bond company that insured it took financial control of production.

Compare how you and other students divided the text. As in key-word reading, there is no "correct" way to divide a text into meaning chunks. Your goal is to focus on and process groups of words rather than individual words. The length of the grouping depends upon you and on such factors as your familiarity with the topic and your goals.

When you phrase-read, you quickly go through the passage and let your eyes stop and focus in the middle of each phrase. Your eye-span takes in, and your mind processes, the entire chunk at once. Although you may find yourself subvocalizing a few words, you are trying, in phrase reading, not to subvocalize at all. This can be very difficult for students who rely heavily on subvocalization; for them, key-word reading seems to work better. But for some students, phrase reading is easier and less disruptive of comprehension than key-word reading. Practice both strategies and decide which works better for you.

Try this strategy

by reading in your normal way. Then, after a paragraph, start phrase reading. Let your eyes stop and focus only a few times per line and try to see and process chunks of print. If, after another paragraph, you feel that you are losing too much comprehension, slow down and read smaller chunks. If, on the other hand, your comprehension seems fine, speed up and read larger chunks. When you have finished, jot down the main ideas of the article.

Push Yourself to Read Faster

In order to develop both fluency and flexibility, you must increase the speed with which you read. You may have heard of commercial speed-reading programs that promise, "You too can read 1,200 words per minute" or "Read a 500-page novel in only an hour." Both of these promises are nonsense; although you may be able to skim at 1,200 words per minute or skim the novel in an hour, you are not physiologically capable of performing either feat—no one is! The human eye is only capable of taking in, at the very most, 600 to 700 words per minute. It takes special techniques and lots of practice to read and comprehend at that speed. People who read at such rates generally do so with easy material and on topics with which they are familiar . . . *not* with college textbooks.

At the same time, if you do begin to read easy materials at a pushed rate of speed, your speed with other materials, such as textbooks, also increases. Your pushed rate is your practice rate where you force yourself to read at an uncomfortable rate. So by practicing on increasing your *pushed rate* of reading, your *study rate* (the slow and careful rate you use with textbooks) also increases. In the end, you will have more flexibility in studying because you can use different rates for different materials.

The best way to increase your pushed rate is to practice pushing. To start, try the following exercise: Find a newspaper or magazine article that interests you. Read it as fast as you can. Then write a brief summary of what you remember. Now select another article of approximately the same length and interest level. Read it at your normal rate, and write a brief summary. Compare your two summaries for the *amount* of information you remembered as well as its accuracy. It is likely that you were able to remember almost as much information from the article you read rapidly as the article you read slowly. The point of this exercise is to show you that you are capable of understanding at a pushed rate of speed. A pushed rate of speed is faster than your normal rate, but you can still understand much of what you read. If you were to push yourself even more, you would still comprehend at least some of the article.

To increase your fluency and flexibility, practice pushed reading for 15 minutes every day. The following are guidelines to help you:

1. Use easy, high-interest material—not a textbook and not something on which you will be tested. Newspaper or magazine articles work well.
2. For 10 minutes, read the material as quickly as you can without losing too much comprehension.
3. To check for comprehension, stop after each article or section and see if you can list five major ideas from what you read. If you can't list five, you need to slow down a little. If you have many more than five, you can push yourself faster.
4. For the last five minutes, once you have established a good pace, make a timed reading. To do this, you could have a friend time you for five minutes, or use a tape recorder on which you have recorded a "Start" signal and, after five minutes, a "Stop" signal. Put a pencil mark on the word on which you start and another at the point where you stop five minutes later. Count the number of words between the marks and divide by 5. This would be your words-per-minute rate.

It is important to remember several key factors when you work on the bad habits that slow you down and begin to increase your pushed rate:

1. *Select material that is easy and of high interest.* Because you probably will notice a decrease in comprehension at first, it is best to begin with easy material. With practice, your comprehension will improve to keep pace with your rate, but the initial drop in comprehension and memory is natural.
2. *Increasing fluency and developing rate flexibility do not happen overnight.* Resign yourself to the fact that it is going to take time. With a concerted effort, most students can at least double their reading rate in six to eight weeks while maintaining comprehension.
3. *Practice reading at your pushed rate for at least fifteen minutes every day.* Most students can find this much time to devote to working on their rates. If possible, try to practice at the same time every day. If it becomes part of your schedule, you will do it automatically. Also, increases in your rate will motivate you to work harder.
4. *Do not give up.* Some students become discouraged at first because they find it extremely difficult to change the reading habits that they have had for many years. Students also become discouraged because of the initial drop in comprehension and fall back to believing the fallacy that in order to comprehend you must read slowly. Just try to remember that the difficulty you may experience in the beginning is natural and that, given time and practice, you *will* be able to increase your rate.

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Developing reading-rate fluency is only part of the picture. Earlier we mentioned the importance of developing rate flexibility, that is, adjusting your rate according to the type of material you are reading. Several factors affect the rate at which you read printed material. The most obvious factor is the difficulty of the material, a factor that is strongly tied to the amount of interest and background knowledge you have regarding a particular topic. For example, to many college students chemistry is a difficult subject because most college freshmen have taken only one previous chemistry course and therefore have little background knowledge. It is also probably safe to assume that many students do not have a strong interest in chemistry. Students who find a subject difficult because they lack interest or background knowledge will have to read the material more slowly than students who know a lot about the topic and who are highly interested in it.

Another important factor that affects rate flexibility is the purpose of your reading. A magazine article or a newspaper should be read relatively quickly, for two reasons:

1. *These materials generally are written at a much lower reading level than textbooks are.* Most newspapers, for example, are written so that anyone with a sixth-grade education can read and understand them. Although magazines may be slightly more difficult than newspapers, they are still relatively simple, and simple material can be read quickly.
2. *In most cases, you read magazines and newspapers for pleasure.* Your major goal is not to remember everything. You might decide to read an article to learn about a new computer or the results of a local election, but you are not going to be tested on it. You are simply reading to gather some information that seems relevant, important, or interesting to you. Two weeks, two days, two hours, or even two minutes later, you may be unable to recall the information, but you aren't expected to.

Textbooks also require rate flexibility. Take a few minutes and glance through the sample chapters in the Appendix. Most students will be able to determine almost immediately which chapters they will have to read more slowly. Typically, the more technical the text, the more slowly you will need to read it. However, also keep in mind that background knowledge plays a major role in how quickly you can read something. Therefore, if you have a considerable amount of prior knowledge on a topic, even if it is technical, you probably can read it relatively quickly.

By developing flexibility with your reading speed, you can be more efficient and effective in your studying.

Key Ideas

1. A key to using your study time wisely is to adjust your study strategies to each class and textbook.

2. The strategies you use, and the amount of time you spend on a course, will depend upon:
 - your background knowledge and interest in the subject
 - the characteristics of the course and the textbook
 - what you have to do with the information in the course
 - your knowledge of a range of study strategies
 - your ability to monitor how well your strategies are working and adjusting those strategies, if needed
3. College texts can be divided into three major disciplines: humanities, social sciences, and physical sciences. These types of texts differ in six areas; by understanding the differences among texts, you can better determine the appropriate study strategies to use.
4. Reading-rate flexibility means adjusting your rate according to the type of material you are reading, the difficulty or complexity of the material, and the amount of prior knowledge you have about the material.
5. Eliminating habits that slow you down and practicing pushed-rate reading will help you develop speed and flexibility.
6. Changing your speed of reading for different materials will increase your effectiveness and efficiency.

Application Exercises (DTT)

1. To give you an idea of your rate on a fairly easy, interesting magazine article, read the following selection, "The Date Who Rapes." Then determine your rate, and take the comprehension check to see how well you understood it.

PART II

DEVELOPING COLLEGE READING and STUDYING STRATEGIES

Abraham Maslow, a famous psychologist, once said, "If the only tool you have is a hammer, you will treat every problem like a nail." In studying, if the only tools you have are the old habits and techniques you learned in elementary and high school, you will probably read and study all your materials the same way, whether or not your methods are effective.

As you saw in Part I, the reading and studying demands of college texts can be diverse. Most of the ideas and techniques in Part II are built around the following learning principles:

1. "Psyching up," or creating interest
2. Using what you already know
3. Intending to remember
4. Anticipating test questions
5. Being selective
6. Creating meaningful organization
7. Putting ideas in your own words
8. Reducing information
9. Finding personal application
10. Monitoring your learning

By understanding and applying these key principles, you should be able to discover studying techniques that work for you. The methods you devise should vary according to what you are studying. Do not try to memorize one or two techniques and use them in every study situation. Rather, use these techniques as well as your knowledge of key learning principles as a starting off point for developing your own.

The principles and strategies we will discuss are built around the idea that what you do before and after you read is as important as the reading itself. In the first edition of *Developing Textbook Thinking*, we used a modified version of the SQ3R¹ method as a framework for studying. However, many students found the method rather overwhelming and time-consuming, and they balked at using it consistently. As a result, what we have tried to do in the second edition of this text is to devise a studying framework that not only will better suit college students' needs, but also will be less burdensome in terms of time. The new system emphasizes not only effectiveness, but also efficiency.

The new system, called PROR, also takes time to learn, but if you stick with it, you will benefit in the end. As you work through the exercises in the text, apply the various ideas and techniques to college-level material, then decide which techniques or combination of techniques are most successful for you.

Because many of you have heard of or have even used the SQ3R method, let us first compare the two methods. The chart below indicates the processes involved in SQ3R on the left and those involved in PROR on the right. The most obvious difference between the two is evident in the kinds of activities that are carried out at each stage of the reading/learning process. PROR focuses more on learning the material in such a way that you can think critically about it rather than simply memorize it. The PROR method not only helps get information into your long-term memory, but also helps you keep it there.

Another important aspect of the PROR system, self-monitoring, is built into each stage. In other words, before proceeding from stage to stage—prereading to reading, reading to organizing, and organizing to reviewing—you monitor your readiness to continue. Note as you read through the PROR overview that each stage ends with a question. If you can answer *yes* to each question and can support your answer with specifics from the text, then you are ready to progress.

	SQ3R		PROR
1. Survey:	Survey Set personal goals Set text goals	1. Preread:	Activate prior knowledge Preview Question
2. Question:	Turn headings into questions	2. Read:	Encode information through annotation
3. Read:	Underline or highlight text information	3. Organize:	Make rehearsal strategies Say information aloud
4. Recite:	Say information aloud	4. Review:	Distribute practice Monitor

¹ F. P. Robinson, *Effective Study* (New York: Harper and Brothers, 1941).

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5. Review: Go over important information

PROR: An Overview

A Method for Effective Studying

PROR = Preread—Read—Organize—Review

Preread:

Activate prior knowledge as you get an idea of the chapter's focus.

- Read the title of the chapter, and think about what you already know about the topic.
- Read the headings and subheadings or chapter outline, if one is included. Try to create an organizational scheme for the entire chapter. As you organize the information, continue to use the knowledge you already possess.
- Think about what might be difficult and what might be easy about learning the information in the chapter. Use this information to set learning and studying goals for yourself.
- Begin to formulate possible questions about key concepts that you might be required to remember for a test.
- Ask yourself, "Do I have a clear idea of what this chapter is about?"

Read:

Read and annotate the chapter in predesignated pieces or "chunks."

- Before beginning to read, set a goal in terms of how much you will complete.
- Read and annotate the text one section at a time by isolating key concepts, supporting ideas, and noting examples in the text's margins.
- Think about ideas, not just words.
- Continue to think about how the text information could be asked as test questions.
- Read actively and aggressively, with the intention of getting answers and remembering important information.
- Ask yourself, "Am I understanding the information in this chapter?"

Organize:

Write down the information that you will need to learn for the test. Say this information out loud in the form of talk-throughs.

- Isolate the important information by making rehearsal strategies such as maps, charts, and concept cards.
- Reread your text only to locate information that is unclear or that requires additional explanation.

PROR: An Overview

- Formulate more specific test questions as you become familiar with the material.
- Talk through the important information in the chapter by covering up the answers to your test questions. Check your rehearsal strategies to see if you are correct.
- Ask yourself, “Do I know this information well enough to score high on the test?”

Review:

Say the information that you have already learned. Practice over several days.

- Reduce your rehearsal strategies each time you review. Use only a notecard with the major points listed one or two days prior to the test.
- Make sure that you can talk through supporting details and examples about your main points.
- Distribute your practice over several days. Do not cram.
- Try to predict more accurate test questions.
- Ask yourself, “Specifically, what information do I know very well? What information do I not know as well?”

Prior to discussing the principles and strategies in depth, let us quickly review the list of learning principles and the steps in the PROR study method to see the relationship between the two:

<i>PROR</i>	<i>Principles</i>
1. Preread	<ul style="list-style-type: none"> ■ Psych up ■ Use previous knowledge ■ Intend to remember ■ Anticipate test questions
2. Read	<ul style="list-style-type: none"> ■ Be selective ■ Create meaningful organization
3. Organize	<ul style="list-style-type: none"> ■ Put ideas in your own words ■ Reduce the information
4. Review	<ul style="list-style-type: none"> ■ Further reduce the information ■ Find personal application ■ Monitor your learning

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Ten Learning Principles

Chapter #		Learning Principle
6	P	1. "Psyching up" or creating interest
	Prereading	2. Using what you already know
		3. Intending to remember
		4. Anticipating test questions
7	R	5. Being selective
	Reading	6. Creating meaningful organization
8		7. Putting ideas in your own words
	Organizing	8. Reducing information
9		9. Finding personal application
	Reviewing	10. Monitoring your learning

* How + Why P.R.O.R. works

An Overview of PROR

P	Preread - will help to activate background knowledge and give you an idea of the chapter's focus
R	Read - read, highlight, and annotate the chapter in predesignated chunks
O	Organize - after reading, construct rehearsal strategies such as: maps, charts, concept cards, time lines; use talk-throughs for reinforcement
R	Review - try to predict test questions; distribute this review over several days

Advantages of PROR

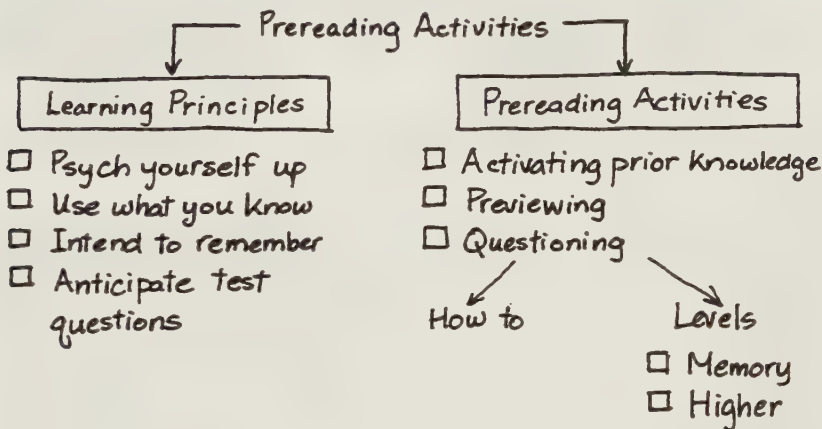
- * provides an opportunity for you to think critically rather than memorizing
- * gets information into long-term memory and keeps it there
- * encourages self-monitoring

Adapted from Nist & Diehl (1990) by Mary Lee Bass

CHAPTER

6

Before You Read



For students who do not have a wide repertoire of study and learning strategies, reading and studying can be passive processes. Students who approach reading passively sit at their desks, “read” the words, underline or highlight line after line, and, when they reach the end of the chapter, close the book and consider their studying complete. Studying passively consists of “looking over” notes or rereading everything underlined in a text, generally the night before a test.

The study method presented in this text is an active approach to reading, studying, and learning. If carried out properly, this method forces you to be an active, involved reader, a reader who interacts with, thinks about, questions, and monitors the progress of each assignment.

In PROR, you engage in prereading activities designed to activate your prior knowledge and to help you organize the information to be learned in some meaningful way. You establish goals, motivate yourself, and begin monitoring your understanding of the chapter before you actually begin reading.

Learning Principles

Principle 1: “Psych Yourself Up,” or Create Interest

You probably can already read and study material in which you are interested effectively. In fact, you can probably actively read about sports, fashion, or lifestyles for an extended period of time. Subjects that interest you keep your attention and concentration and help you to remember the material later. However, you may not have developed such a keen interest in some college subjects. As you learn more about those subjects, your interest will develop naturally. But until your interest develops, you need to find ways to “psych yourself up,” or create interest in the subject. Setting goals, asking questions, annotating, and other techniques discussed in this book are designed to help you create interest and to maintain concentration, even in materials that would be very dull otherwise.

Principle 2: Use What You Already Know

We know that people comprehend and remember new things not by starting from scratch with each new passage, but by building on what they already remember. In other words, you do not create a brand new “page” of memory for each thing you read. Instead, you take what you read and store it with information you already have. You insert some new lines in a page of existing memory.

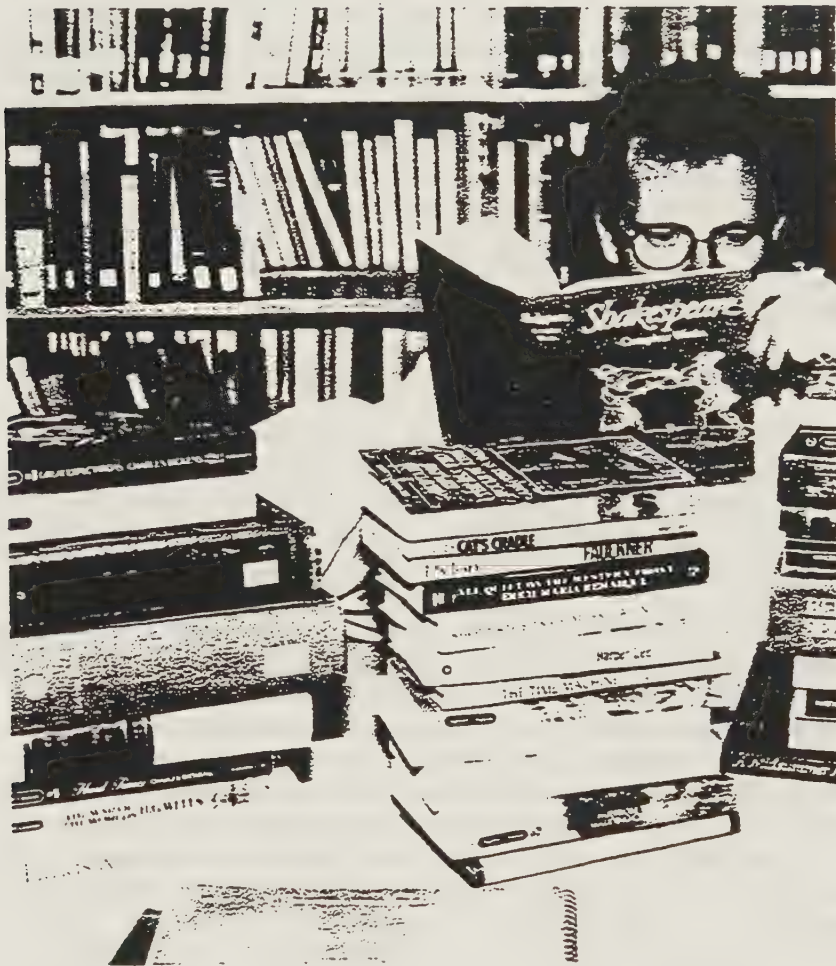
You can read, comprehend, and remember information effectively and efficiently if you are actively using what you already know. It makes sense to review old information before starting on new. It makes sense to bring to mind what you know about a topic before reading more about it. For example, if you are assigned to read a biology chapter on unicellular plants and animals, think back to that pond water you examined under a microscope in eleventh grade. Try to remember what you saw and what you learned. Add to your existing knowledge. Use the “page” you have in mind as a basis for broadening your knowledge and increasing your understanding.

A grave mistake that many college freshmen make is to treat each topic in each class as a bit of isolated information, feeling that sociology has nothing to do with psychology, that psychology is unrelated to literature. Of course, these assumptions are false. What you learn in one class helps you in another. What you already know helps you continuously.

Another way to use what you already know is to try to relate your reading to your life or to the lives of your friends or relatives. Do you remember the student who wrote the journal on Social Security (page 11)? She found it difficult to maintain interest in Social Security, because it would not affect

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her for 40 or more years. But if she knew a relative or friend who was struggling to live on Social Security, the article might have been less boring to her.



Having—or creating—interest in a topic greatly increases your concentration, understanding, and memory for material. (Courtesy of Sangamon State University, Springfield, Illinois.)

Principle 3: Intend to Remember

You probably have been to a party at which someone told you his or her telephone number. If you did not really intend to phone the person later, you rapidly forgot the number. In fact, you probably did not even pay attention when the person gave it to you. However, if you did intend to call the per-

son, you probably did all types of things to help yourself remember. You might have repeated the number over to yourself several times, written it on the inside of a matchbook, invented a memory device to help you remember it, and so on. As soon as you actually decide to remember something, you begin to do so.

The same principle applies to text reading. If you are only reading the material because it is assigned, then you probably do not intend to remember it. Consequently, you do not pay close attention and you do not make efforts to isolate, rehearse, consolidate, or apply information. Instead, you grit your teeth and plow through, heaving a sigh of relief when you are finished. By intending to remember information, you get your mind actively working on strategies to remember. You pay closer attention, you monitor your learning, you make connections with what you already know, and you use strategies to help fix the material in your memory.

Principle 4: Anticipate Test Questions

Your college career revolves around two things: learning and the game of learning. It is not enough for you to learn the material in a class; you also have to perform well on tests, in discussions, and in writing papers. Because there is so much information to learn in any one class, you must be selective. You can best select what you want to know and what you anticipate will be on tests.

Selectivity involves being a good predictor. As you engage in prereading activities for a chapter and begin to formulate questions, try to predict how your professor might test you on the material. Try to think like your professor by identifying the information that your professor feels is important. At first this will be a difficult task, but as you get to know your professors better and become more attuned to their lecturing styles and exam formats, you will find it easier to predict the concepts and questions they feel are important.

Now that you are familiar with the first four learning principles, let us turn to the prereading strategies that have been designed to relate to these principles.

Preread

Why engage in prereading activities? For one thing, it is difficult to judge the importance of information if you are unaware of where the chapter is going. For example, the text might use an unusual term or introduce a concept early in the chapter. How important is it to grasp that word or concept? You cannot know unless you know whether the word or concept is used again or elaborated upon later. Prereading improves learning in several other ways:

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1. It provides a meaningful organization for the material to be learned. As you read the headings and subheadings, they will help you organize the major topics and subtopics presented in the chapter.
2. Prereading gives you information about the chapter before you actually start to read. It helps you to see where the chapter starts, where it ends, and the direction it will take. You will then be able to use what you already know about the chapter to help you read and study better.
3. Prereading creates interest. When you preview something quickly, you almost always end up feeling that you missed a great deal of information. Cultivate this feeling of curiosity. Read the whole chapter in order to satisfy your curiosity and to fill in the gaps in your information.

Let us examine in more depth what is involved in each aspect of pre-reading.

Activating Prior Knowledge

Individuals, by virtue of possessing experiences unique unto themselves, can almost always call up some existing knowledge about a topic. Granted, you will not be an expert in all areas, nor will you have the accuracy in your information that you might have originally thought, but you will know something that can be useful in helping to understand the impending chapter. Think about the example of reading the newspaper article about the basketball game given in Chapter 5. Remember that the amount of knowledge you have affects how you will study the material.

When you activate existing knowledge, use the following guidelines:

1. Read the title and ask yourself, "What do I already know about this topic?" Before you go any further, give yourself a moment to think about the knowledge you already have. If you have trouble doing this, try jotting down a list of terms or concepts that seem related to the title.
2. Ask yourself, "What would I like to know about this topic?" Even if you would like to answer this question by saying "nothing," come up with two or three ideas that have potential for future learning.
3. Think about the kinds of strategies and approaches to learning that you might have to employ based on your prior knowledge. For example, if you know very little about the topic, you will have to annotate more, create more detailed rehearsal strategies, and spend more time on the chapter than if you have a significant amount of knowledge about the topic.

After you have activated your prior knowledge, you are ready to get a "feel" for the chapter by previewing it.

Previewing

Use the following steps when previewing the chapter. Think of the preview as a road map or game plan that will guide you through the chapter. The overall purpose of the preview should be to give you a general idea of where the chapter begins and ends; it should not be an extremely detailed or lengthy process.

1. Skim the chapter. Skimming orients you to the information included. Skim to see how long the chapter is. If it is extremely long, you may want to read half of the chapter, take a brief break, and then complete your reading.
2. Read the title and activate prior knowledge as outlined previously. As strange as it may sound, some students neglect this very important step.
3. Read the chapter headings and subheadings. Reading the headings aids you in several ways. It shows you how the chapter is organized, aids you in formulating questions to be answered during reading, and divides the chapter into logical learning units. It also helps you to use your background knowledge. When you read the chapter title, you began activating your general knowledge. The headings and subheadings help to activate your specific knowledge.
4. Look over any charts, graphs, diagrams, or pictures. These learning aids can be extremely helpful because they present a visual picture of important ideas in the chapter. Make sure you understand the information shown. Read each caption and all labels.
5. Note unfamiliar terms, particularly those that are related to the discipline about which you are reading.

If time permits or if your background knowledge about the chapter is particularly weak, take the following steps:

1. Read the summary at the end of the chapter (if one is present). Just as the introduction states the major points to be covered, the summary restates the ideas that the author deems important. The introduction tells you where the chapter will go; the summary tells you where it has been. Note what is said in the conclusion so that when you read the whole chapter, you can read carefully for those major ideas, implant them firmly in your mind, and intend to remember them.
2. If there are questions at the end of the chapter, read them; the author is asking for the most important information in the chapter. Many students avoid reading these questions, only to find a similar question on a test of the material.
3. Stop and think before reading the entire chapter. Take a couple of minutes. Let what you have just found out about the chapter sink in. What do you know about this chapter? Do you understand how the chapter progresses? Have you already begun to see the major ideas? How much can you remember simply from previewing? Think from the time you

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begin learning a chapter, and you will be able to understand and remember much of it.

The exact process that you follow when you preview depends on three factors—the type of material you are reading, the time restraints you have, and the amount of knowledge you already have. Adjust your previewing procedure accordingly. However, do not skip the preview altogether. You will find some previewing steps more helpful than others. With previewing, as with the other strategies presented in this text, use what is most efficient and effective for you.

Set Goals and Begin to Formulate Test Questions

For many students, the main goal in reading a textbook or listening to a lecture is merely to complete an assignment. If that is your only goal, you will find your work boring and tedious. You will find yourself losing concentration and thinking about all the things you would rather be doing. You also may find yourself disliking the text, or the teacher, or the school for forcing you to do things that you have no desire to do. But if you can set other goals for yourself besides doing it “because it’s assigned,” you are more likely to maintain concentration and to understand and remember information.

You can set two kinds of goals—personal goals and textual goals. Personal goals give you meaningful reasons to read chapters and are closely tied with prior knowledge and experiences. For example, students in psychology classes always seem to read, understand, and remember the chapters on sex and on psychological abnormalities. Why? Students have personal reasons for wanting to know about these topics. As they read, they are always looking for information to help them personally or to answer personal questions (“Why is my roommate so crazy?” or “Is my anxiety a sign of abnormality?”).

Even for chapters with less obvious personal meaning, you can and should set personal goals. After previewing a chapter, think for a moment about some personal questions the chapter may address. Think how the information might apply to your personal or social life.

The second kind of goals are formulated to answer questions about the text. Textual goals initially can be devised by asking questions based on the chapter’s headings and subheadings. As you read each heading or subheading, pose questions to guide your reading. The major purpose of this type of prediction is to help you start thinking like your instructor. In other words, from the time you begin to familiarize yourself with the chapter through previewing, you should try to predict which questions your instructor might ask on the test. Even if your predictions are incorrect, you will have read more actively. Posing questions also alerts you to the author’s organization of the subject matter and to what is and what is not important.

The easiest way to formulate questions is to turn headings or subheadings into questions. After all, the heading shows you the topic that the author decided was key for that section. Use the actual words of the heading or subheading in your questions. Questions that ask who, what, when, where, why, or how are easy questions to begin with. Who, what, when, and where questions generally elicit factual information. Why and how questions call for broader, deeper levels of comprehension.

Although turning headings into questions is an easy way to form initial predictions, it can become counterproductive and tedious. Students who turn most headings into questions by using the word “what” are only posing memory-level questions that encourage lower-level thinking skills. This is also a very passive activity. Instead, try to ask purposeful and useful questions that will guide your reading and aid your studying at test time. It is much better to ask a few good questions initially than it is to ask only “what” questions simply for the sake of carrying out this aspect of the PROR process.

Look at the following examples from the chapters in the Appendix. Which questions are good and which questions are not so good? Why?

<i>Heading</i>	<i>Questions</i>
The Vietnam Quagmire (History)	How did the U.S. become involved in Vietnam? What was the Vietnam quagmire?
Project and Matrix Organizations (Business)	When would the two types of organizations be most appropriate? Why? What are project and matrix organizations?
Pesticides (Physical Science)	How do pesticides pollute? What are pesticides?
Modernism in America (Humanities)	When did Modernism take place? What are the characteristics of modernistic paintings?

Notice that while all of the questions use the actual words from the headings or subheadings, each pair has a better question. For example, in the first pair of questions, “How did the U.S. become involved in Vietnam?” is the better of the two. It asks for more advanced levels of thinking and requires you to trace historically the U.S.’s involvement. This question certainly might be one that your history professor would draw from to make test questions. In contrast, the second question is vague and you could supply an equally vague answer. “What was the Vietnam quagmire?” It deals with the U.S. involvement in Vietnam. If you find that you can supply answers such as this to the questions you formulate, try again. Questions should be specific enough so that you can supply a direct answer.

Remember that your questions should lead to the major information in the text. It takes some trial and error to figure out how many and which

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types of questions to use with any one text. But because writers are quite consistent, once you have figured out the right questions for one section you should be able to ask the same type and number of questions for future sections. Keep in mind that the best test of your predicting ability is your exam score. If it is high, your questions and the instructor's questions probably are a good match. However, if your exam score is not as high as you would like, reevaluate your prediction questions. (See Chapters 9 and 11 for more information on evaluating test performance.) Remember:

- Asking questions creates interest. It makes you read for a very specific purpose.
- Asking questions helps with “intending to remember.” Your answers to the questions are what you have decided to remember, and so you intend to remember them. But beware: research indicates that if you are a poor question predictor and only concentrate on trying to answer your predictions, you could miss important information.¹ The exercises in this text will sharpen your ability to predict questions.
- Asking questions helps you to anticipate tests. Once you start asking questions, you may be surprised by how many test items resemble the questions you asked yourself!

Levels of Questions

Students who clearly understand and remember what they read are usually active readers. They do not simply take in words passively. Active readers question constantly as they proceed through a chapter. They pause, think about what they have just read, and formulate questions about what they have just read and what they are about to read. Active readers ask not only memory-level questions but also higher-level questions.

You can choose to ask one or both types of questions, depending on the kind of material to be read. An easy way to remember the two types is by the level of understanding required to answer them. Memory-level questions require memorization of factual information, while higher-level questions require interpretation and application of the information learned.

Memory-Level Questions

The first type of question is the memory-level, or “reading-the-lines” question. When you finish a passage, ask memory-level questions to test your recall of the facts. Who, what, where, when, and why questions will help you to make sure that you have all the facts straight. Some memory-level questions for the article “You Can’t Take It With You” on page 226 might include:

¹ T. Anderson and T. Biddle, “On Asking People Questions About What They Are Learning,” in G. Bower, ed., *The Psychology of Learning and Motivation* (New York: Academic Press, 1975).

- Where did the idea for pay-now life insurance originate?
- What disease do many of the people who use pay-now life insurance have?
- Who can take advantage of this benefit?
- For whom is it best suited?
- What are the criticisms?

Questions such as these are easy to form and to answer because the information is explicitly stated in the article. However, in order to do well on most exams, you will need to have a more in-depth understanding of the significance of the material when test time arrives.

Higher-Level Questions

The other type of question is the higher-level question. These questions require “reading between the lines” and “reading beyond the lines.” Rather than merely remembering facts, you also need to think, interpret, and apply your knowledge. Higher-level questions require from the reader some kind of analysis, judgment, or generalization. Sometimes they have no single correct answer; instead, you must support your answer by going beyond the text.

For example, in the article “You Can’t Take It With You,” you should ask higher-level questions such as:

- How might this idea change the entire concept of life insurance?
- How might people be able to take advantage of this type of benefit?
- How might Living Benefits exploit the terminally ill?

Another effective way to find higher-level information is to ask yourself:

- What, in my own words, are the most important ideas in this article?

Often a reader has to answer “I don’t know” to higher-level questions. However, not being able to answer applied questions does not mean that you have not read and studied effectively; perhaps no one in the world yet knows the answers to such questions. The important thing is that by asking probing questions while you read, you will more clearly understand what you read, and you will be able to remember what you read for longer periods of time.

To try out this reading and questioning technique, read “You Can’t Take It With You,” thinking about the two levels of questions while you do so. Pause for a moment and make sure you understand the major ideas presented. Finally, jot down some of your questions and check to see if you have a few at the memory level and a few at the higher level. Check your questions against those suggested at the end of the chapter. Be careful not to write only memory level questions.

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Key Ideas

1. Prereading activities are built around four important learning principles:
 - psyching yourself up
 - using what you already know
 - intending to remember
 - anticipating test questions
2. Previewing and questioning are important strategies to carry out before reading a chapter thoroughly.
3. Previewing involves getting an overview of a chapter by:
 - reading headings and subheadings
 - looking at typographical aids
 - noting difficult vocabulary
 - recognizing the chapter organization
4. Questioning involves formulating questions based on the important concepts presented in the text. Questions can be formulated by turning headings and subheadings into questions.
5. The two levels of questions are memory-level and higher-level questions. Formulate both types for each chapter.

4. The following headings and subheadings are taken from the chapters in the Appendix. Using the headings as a guide, formulate questions that might provide important information to learn for a test.

- (a) “The Stormy Sixties”
 - Kennedy’s New Frontier Spirit
 - The New Frontier at Home
 - Rumblings in Europe
 - Foreign Flare-Ups and “Flexible Response”
 - Stepping into the Vietnam Quagmire
 - Cuban Confrontations

- (b) “The Modernist Movement”
 - Modernist Painting 1900–1930
 - Henri Matisse (1869–1954)
 - Pablo Picasso (1881–1973)
 - African Art
 - Influence of Cézanne and African Art on Picasso
 - Cubism
 - Collages
- (c) “Organizing a Business”
 - What is an Organization?
 - Formal and Informal Organizations
 - Formal Organizations
 - Tools of Formal Organizations
 - Informal Organizations

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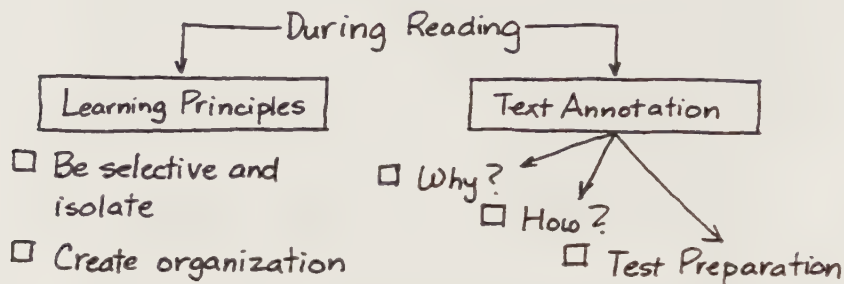
Application Exercises (Your Texts)

1. For a chapter in one of your texts, engage in prereading activities by activating prior knowledge, previewing, setting goals, and formulating questions based on the information gained from the headings and subheadings. Write out exactly what you did.
2. Prior to reading the chapter, write several memory-level and several higher-level questions. (Save these questions for later use.)
3. As you engage in prereading activities with chapters from different content areas, answer the following questions to ensure that you are ready to progress to the reading stage:
 - (a) List three things that you already know about this chapter.
 - (b) How many major concepts are presented in the chapter? List them.
 - (c) What appears difficult about this chapter?
 - (d) What appears easy about this chapter?
 - (e) How is this chapter different from the last one you read?
 - (f) What strategies might be appropriate to use when studying this chapter?
 - (g) What kind of test questions might you expect for this chapter?
 - (h) Predict several memory-level and several higher-level questions for this chapter.

CHAPTER

7

While You Read



Learning Principles

In the last chapter, we discussed the importance of activating prior knowledge, previewing, and predicting possible questions. We also saw the four important learning principles that describe what you need to do before you begin to read a chapter in its entirety:

- psych yourself up
- use what you already know
- intend to remember
- anticipate test questions

There are also learning principles to guide your choice of study strategies while you read a chapter:

- be selective and isolate
- create meaningful organization

The process of text annotation, also discussed in this chapter, is based on these two learning principles.

Principle 5: Be Selective and Isolate

You have a large quantity of material in each subject to read and study, but you are limited by the amount of time you can study and in the amount of information you can reasonably commit to memory. Therefore, in every phase of your reading and studying, you have to be selective. Selectivity is based on several interrelated factors:

- your background knowledge about the subject
- the amount of material and the way it is presented
- the types of information the text and/or the professor stresses
- the types of exams, papers, discussions, and other performances you are expected to give

For example, if you had considerable background experience in the sciences in high school and you did extremely well in those courses, you probably would have to annotate and study less in college science courses than an individual with a limited background in sciences.

However, it is not sufficient to select key information; you must also isolate it for later study. Isolation involves distinguishing key concepts from supporting details and selecting appropriate examples to depict key concepts. Isolating information is the first step in reducing the large amount of material presented in texts. Keep in mind that much of this material is unimportant. What you want to do is to think about isolation as a kind of filtering process. When you are finished, only the important material remains; the rest has been removed.

Principle 5, Be Selective and Isolate, is built into most of the study techniques presented in this text. Remember that you will have to study material in your various subject areas differently, depending upon how selective you need to be.

Principle 6: Create Meaningful Organization

Comprehension and retention of material are much easier when you have some organization in which to fit the material. Organization is very important because of the limits of human memory. Many psychologists believe we have both “short-term” and long-term” memory. Short-term memory helps to screen, select, and consolidate information for long-term memory. But short-term memory has a limit, on the average, of about seven items. In other words, we can only store seven things at a time in our short-term memory (a fact that may explain why we have seven days in a week, seven digits in telephone numbers, seven deadly sins, and so on). Thus you can remember “photosynthesis” much more easily than “ostsptyhihones,” because you remember the first as one item (one word) and the second as fourteen items (fourteen letters).

Read the following passage, and be prepared to tell what it is about.

The procedure is actually quite simple. First you arrange things into different groups. Of course one pile may be sufficient, depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, this is part of life.¹

Could you tell someone what the passage was about? Although all the words are familiar, and the sentences by themselves appear to make sense, the whole passage may not make sense to you. The problem is that you have no meaningful organization for the information. But suppose that you entitled the passage "Doing the Laundry." Now read the passage again, and see how all the information makes sense. The title enables you to apply meaningful organization to the passage. It makes sense because you know about doing the laundry and because all the sentences can be interpreted easily in that light.

Students who do not meaningfully organize what they are reading often fail to see how the ideas presented fit together. As a result, these students try to memorize many small bits of information, rather than structuring their learning around major concepts, supporting details, and examples. The fragmented nature of this type of learning means that students who approach the text in this manner often perform poorly on tests. Organization is important both for learning the material and for being able to supply the information at test time.

Be Selective—Annotate Your Text

Information, whether written or spoken, tends to have two parts—major concepts and supporting details. Supporting details take the form of proofs, explanations, or examples. However, not every paragraph contains a major concept. Only about one-half of all the paragraphs in a text have a recognizable main idea.² Attempting to look for a major concept in every paragraph, therefore, is an exercise in futility.

¹ J. D. Bransford, *Human Cognition: Learning, Understanding, and Remembering* (Belmont, Cal.: Wadsworth Publishing Company, 1979), pp. 134–35.

² R. R. Braddock, R. Lloyd-Jones, and L. Schoer, *Research in Written Composition* (Champaign, Ill.: National Council of Teachers of English, 1963), pp. 13–14.

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Although the major concepts are the key parts of the text passage, it is not sufficient to concentrate only on learning these main ideas. In most subjects, you also need to know important proofs, explanations, or examples. This supporting information helps you to assess the value of the major concept, and helps you better to understand its relationship to other ideas. At the same time, it is not sufficient to concentrate only on the supporting details, for they have no value without the major concept.

Don't interpret this to mean that you have to learn everything in the text. First of all, it is impossible to do. Second, no one expects you to learn everything. Instructors will tell you to learn just the "most important information." But how do you identify the "most important information"?

To begin with, you must learn all of the major concepts stressed in a text or by a lecturer (see Chapter 10). Then you should learn as many supporting details and examples as you need to help you understand and remember concepts and to help you pass tests. Being selective, then, depends upon being able to:

- differentiate major concepts from supporting details.
- assess which major concepts are really important, which are somewhat important, and which are unimportant. If you have done a good job of previewing and formulating some possible questions (see Chapter 6), you should have some basis on which to select the most important ideas.
- pick up cues from a text and from a lecture that can help you to judge the importance of information.
- monitor your own learning and background knowledge, so that you can judge how much supporting information you need. When you monitor your learning, you are continuously aware of what you know and what you do not know about a particular chapter.

Annotating: A System of Text Marking

Text marking is often a difficult technique to learn. If you are a college freshman, you probably have had little opportunity to mark your books, because most high schools frown on students writing in their texts. Freshmen in college often highlight as they read—in fact, they often highlight everything! It is not uncommon to open a student's psychology or sociology text and to see pages of text that are almost totally yellow, pink, or green!



This student is highlighting as she reads the text for the first time; she will probably mark far too much of the material to be of much use to her during later review, because when reading for the first time, she doesn't yet know which material is most important and should be highlighted! (David S. Strickler/The Picture Cube)

Marking a text in this manner certainly does not serve as a valuable study aid and is actually no better than doing no marking at all. Highlighting carried out in this fashion is a passive activity and does little, if anything, to aid in the comprehension and retention of important information.

The opposite problem can also arise. That is, students often merely read the text without doing any kind of marking. Many used books are returned to the bookstore with few or random markings. Students who fail to mark their texts will not be able to use their books to help them during test preparation unless they plan on doing an enormous amount of rereading. Since most college students do not have time to engage in copious amounts of rereading, this method of study is neither efficient nor effective.

The system suggested in this text forces you to be selective in your marking and helps you isolate key ideas in the text's margins, thus promoting active reading. The annotating system is also a very effective study aid. The following principles apply:

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1. *Set aside your highlighters.* Use a pen or pencil to do your annotation. The reason for choosing a pen or pencil is simple—you cannot write with a highlighter and annotating involves writing.
2. *Remember that when you mark your text, you should be able to use it to aid future reviewing.* Good annotations stand the test of time. When it comes time to prepare for exams, you should be able to study using your annotations. The markings also can be used to create rehearsal techniques as discussed in Chapter 8.
3. *Annotation involves writing rather than underlining.* It means writing key words and phrases in the margins of your text so that you can easily refer to them later to locate key words, names, dates, lists, and the like. Annotating also consists of jotting abbreviations (such as “def.” for definition; “ex.” for example, “*” for important, “/” for supporting details). Because you annotate as you read, a pen or pencil is more appropriate than a highlighter.
4. *Read and annotate a section at a time,* using text headings and sub-headings as stopping points. After reading and annotating a section, stop and think about the questions you posed as part of your preview (a technique described in Chapter 6). Can you answer those questions?
5. *Put the information in your own words;* do not copy directly from the book unless you are annotating something that must be learned exactly as stated. An example of this might be annotating a formula in a chemistry or physics text. Otherwise, even with most definitions, try to put the material in your own words. Putting things in your own words indicates that you understand it.

Notice that when you use the PROR method, each new step builds on the previous one. Thus, in order for annotating to be most effective, you must first engage in prereading activities to activate prior knowledge, to see how the chapter is organized, and to get a general idea of the concepts presented. You must also formulate good questions and read to answer them. Then you must continue to restate and revise your questions and to pose new ones as you find out more about the chapter. Your questions can be the key to annotating a text properly. If you ask good questions, you should be able to do a good job of isolating important text information.

Notice also that you are actively involved in your reading. When you read actively, you can remember more than when you read passively. Studying and reviewing become much less painful tasks. Although at this point you might think that these procedures require an inordinate amount of time, you will find that, in the long run, you will save time. As with anything in which you wish to become proficient, practice is the key.

How to Isolate Key Information Through Annotation

In order to do an adequate job of isolating important information by annotating, you must, first of all, be actively engaged in reading. You must also continuously monitor your understanding of the text. Remember to ask yourself, “Do I understand what I am reading? Am I selecting the key points?” Annotating forces you to monitor and to select because you write the ideas in your own words.

While you probably have gotten the idea by now that annotating involves writing key points in the text’s margins, let’s examine some specific kinds of information you should target. Annotate:

def.

ex.
eg.
i.e.

FDR (19)

3 reasons for x

1.
2.
3.

Cause → Effect

1.
2.
3.

- definitions for content-specific terms and concepts. In some texts, key terms are already isolated for you in the margins. A word to the wise—be careful not to overlook these marginal definitions. It doesn’t hurt to annotate the isolated definitions.
- examples that illustrate theories, experiments, and so forth. Many students overlook examples, only to find them on tests.
- names/dates/events. Names, dates, and events are important in history and in certain humanities and social science courses, but a word of caution is in order here. Make sure that names and dates aren’t the only information that you annotate. In high school, students often become accustomed to memorizing names and dates because that is what is asked on tests. In college, because you are expected to think at a higher level, names, dates, and events are only a small part of what you are expected to learn.
- lists or characteristics. Watch for cues such as “There are three major reasons for . . .” or “Four features distinguishing Theory X from Theory Y are . . .” Annotate these reasons or features and make sure that you number them.
- causes/effects and likenesses/differences. Cause/effect and likeness/difference information makes for good essay questions. Remember that a cause comes before an effect and that there is usually a chain of events. Hence, what initially was an effect may be the cause of a subsequent event.

Most students prefer to read a paragraph or two and then annotate. It is better yet to read an entire section and then go back and annotate. How do you know if something is important enough to annotate unless you have read it first? However, many students find it difficult to read larger chunks of text and then go back and annotate. What you want to try to avoid is annotating as you read. Students who do this usually copy exactly from the text rather than putting the information in their own words. In addition, they almost always annotate too much. If you find that it is taking you forever to annotate your chapter, you are probably marking as you read. Instead, you

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need to read a piece of text, think about the key information, and then annotate.

In addition to annotating, some students also like to underline. We feel that if you do a good job of annotating, underlining really isn't necessary. However, if you want to underline in addition to (not in place of) annotating, following a few guidelines will help. First, annotate. Then go back and underline the information that you annotated. The purpose of the underlining should be to identify material that further explains your annotations in case you need to clarify your understanding by rereading. In other words, if the material was not important enough to annotate, it should not be underlined. Remember that if you do underline, use a pen. Do not use a highlighter.

Using Your Annotations for Test Preparation

If you have annotated properly, you have already taken a big step in preparing for the exam that will cover the material. Once you have annotated in your own words and monitored your understanding, you have started to put key information into long-term memory. Now you are ready to use those annotations as part of several test preparation strategies. One strategy is to study your annotations directly. To use this method, follow these procedures:

1. Cover the actual text. You want to avoid large amounts of rereading and concentrate only on the annotations.
2. Read your annotations. Explain each theory; give examples of each experiment. It is important to be sure that you know the information thoroughly. Students often make the mistake of learning only the names of three important theories or two important reasons. Make sure that you understand the basis of those theories and why certain battles were important. Ask yourself the following questions: "Do my annotations make sense? Do I understand what I have annotated?"

3. Reread the text only if you cannot explain your annotations. This is where underlining can be helpful. Find the section of the text that explains the annotation and reread only that part. If you have underlined, read only the underlining that explains the annotation. Do not waste precious time reading unrelated material; stay focused on the particular information you are seeking.
4. Talk through all of your annotations, marking in some way that which you know and that which will require additional study.

Now that you have an idea of what annotation entails and how to annotate, let's look at some examples. Selections taken from three different chapters that appear in the Appendix serve as models for you to follow. The computer science excerpt, which we will discuss in detail, has been completely annotated for you, but the psychology and physical science excerpts are only partially annotated so that you can practice on them.

Notice several features of the computer science annotations. First, the arrows show some sort of logical flow of information. In this case, the annotations reveal, from larger to smaller units, the principle hardware units in the computer. Note that, for the most part, the annotations consist of a series of definitions that have been organized from larger to smaller units. Each of the key terms has also been underlined so that it is easy to see which terms are presented on this particular page. The annotations are legible and could easily be used in studying. Abbreviations have been used when appropriate to make the annotating more efficient. The key information has been isolated in the margins so that when it comes time to prepare for the test covering this material, self-recitation will be easy.

Now look at the skeletal annotations for the psychology selection. Although these annotations are obviously incomplete (you will finish them when you do the Application Exercises at the end of the chapter), the organization, as well as the key ideas, is readily apparent. Note that the two instincts, as well as the two explanations of Freud's concentration on sex, are numbered and subsumed under their respective headings.

Finally, the physical science selection, though also skeletal, shows a distinct organization. Particularly note the key words "however" and "but". Words such as these indicate "the rest of the story." In this case, the text states that synthetic detergents were produced that did not lessen the cleaning action. However, synthetic detergents caused problems because they were not biodegradable. The lesson here is to make sure that you get all of the important information in the annotation, not just part of it.

Key Ideas

1. Annotating is derived from two key learning principles: being selective and creating meaningful organization.

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2. Use the information gleaned from previewing and the questions formulated for each section to help you select the main ideas.
3. Read to answer your questions and to discover other important information your questions may have missed.
4. Annotate as you read.
5. After you have read a section, think about it. Attempt to recall its most important information by answering your questions.
6. Use your annotations to prepare for exams.

ANNOTATIONS/TEXT MARKING/MARGINAL NOTES

def.	definition
ex.	example (1,2,3)
T.	possible test question
*	important information
?	unclear material - need to have clarified
sum., conc.	summary information

ANNOTATIONS/TEXT MARKING/MARGINAL NOTES

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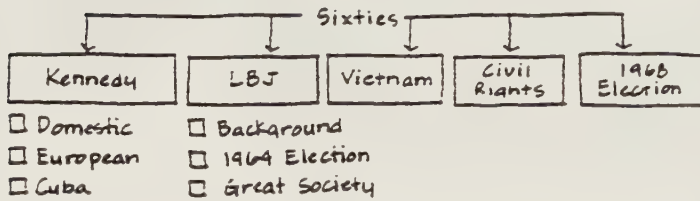
Quick tips:

As you are reading your text, be aware of any reading material which sounds like a question your professor might put on an exam. Indicate that information with a 'T.' Remember it will be very difficult to locate this specific information later, so make sure you mark the text immediately!

As you are reading your text, you may come across material which is not completely clear. It is a good idea to mark this part of the text with a '?' to indicate you need extra clarification during the next class session. Additionally, if you decide to ask for clarification during class, you have delivered two important messages to your professor.

They are: (1) you have read the assigned work prior to class, and (2) you have an interest in the course content. This, of course, is also an excellent way to become actively involved and to enhance the participation component of your grade.

THE NEW FRONTIER AT HOME



Kennedy's New Front. (at home) Problems

1. So. Demo. opposed to some prog.
 - ⓐ med. assist. for old fed. aid to educa.
- forced expansion of House Rules Committee
However... Bills still moved slowly through Congress.
2. Economy
 - Tried to keep inflation down
- neg. 1962 noninflationary wage agreement w/ steel mfg. → Comp. would try to keep infla. ↓.
 - Steel ind. increased prices, Kennedy became angry; steel corp. backed down.
- Steel episode made other industries attack New Front.
- announced tax cut bill as a way of stimulating econ.

Kennedy came into office with narrow democratic majorities in Congress. Southern members of his own party threatened to team up with Republicans and lay the ax to New Frontier proposals such as medical assistance for the aged and increased federal aid to education. Kennedy won a first round in his campaign for a more cooperative Congress when he forced an expansion of the all-important House Rules Committee, dominated by conservatives who could have bottled up his entire legislative program. Despite this victory, the New Frontier did not expand swiftly. Key medical and education bills remained stalled in Congress.

Another vexing problem was the economy. Kennedy had campaigned on the theme of "getting the country moving again" after the recessions of the Eisenhower years. While his advisers debated the best kind of economic medicine to apply, the president tried to hold the line against crippling inflation. His administration helped negotiate a noninflationary wage agreement in the steel industry in early 1962. The assumption was that the companies, for their part, would keep the lid on prices.

Almost immediately, steel management announced significant price increases, thereby seemingly demonstrating bad faith. The president erupted in wrath, remarking that his father had once said that "all businessmen were sons of bitches." He called the "big steel" men onto the White House carpet and unleashed his Irish temper. Overawed, the steel operators backed down, while displaying S.O.B. buttons, meaning "Sons of Business" or "Save Our Business."

The steel episode provoked fiery attacks by big business on the New Frontier, but Kennedy soon appealed to believers in free enterprise when he announced his support of a general tax cut bill. He rejected the advice of those who wished greater government spending and chose to stimulate the economy by slashing taxes and putting more money directly into private hands. When he announced his policy before a big business group, one observer called it "the most Republican speech since McKinley."

Graphic Organizers, Sample Annotations, and Exams

For economic stimulus, as well as for military strategy and scientific prestige, Kennedy also promoted a multibillion-dollar project to land an American on the moon. When skeptics objected that the money could best be spent elsewhere, Kennedy "answered" them in a speech at Rice University in Texas: "But why, some say, the moon? . . . And they may well ask, why climb the highest mountain? Why, thirty-five years ago, fly the Atlantic? Why does Rice play Texas?" Twenty-four billion dollars later, in 1969, two American astronauts triumphantly planted human footprints on the moon's dusty surface.

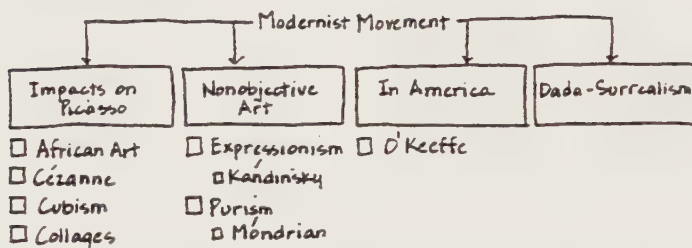
3. Space program

- many criticized K. for putting much \$ into prog

Source: Adapted from T. Bailey and D. Kennedy, *The American Pageant*, 8th Ed., Chapter 43, pp. 859-880. Copyright © 1987 by D. C. Heath and Company.

Graphic Organizers, Sample Annotations, and Exams

THE MODERNIST MOVEMENT: PAINTING*



African Art Another artistic phenomenon that had a major impact on Picasso and his friends was the art of Africa and the South Pacific. Acquaintance with a completely different formal tradition is usually a very liberating experience to artists. It was so in the nineteenth century when Europeans became acquainted with Japanese prints. When Gauguin and others brought objects to Paris from Africa or the Pacific, interest was stimulated in what had heretofore been considered curiosities brought as memorabilia by colonists, travelers, or ethnographers. This so-called "primitive art" represented completely different formal traditions. These have been exaggerated and combined into a strong, harmonious whole by the purely formal elements of the medium: plane, surface, texture, and shape. The existence of this tradition affirmed the

African Art

- Big impact on Picasso et al.
- Called primitive art when first intro. by Gauguin in France.
- Contained formal elements of plane, surface, texture & shape... suggested that...
- art did not have to copy objects in real world

*Instructor: You may want to obtain copies of some of the paintings referred to in this chapter and bring them to class for discussion.

-Initially Picasso et al. copied pieces but soon they adopted their own versions making objects unrecog.

-Works were not well received

-Comments by art critic Apollinaire.

belief of many artists that objects of art could speak in their own right, independent of the need to copy the familiar aspects of the visible world. At first these artists, including Picasso, copied the new forms and shapes, studying them and including them directly in their work. But very rapidly each artist adopted this influence to his particular uses, making the objects almost unrecognizable. Naturally, the majority of the European public did not receive either the African art or the work of artists inspired by it with enthusiasm. An apologist for both, the French poet and art critic Guillaume Apollinaire, argued persuasively for an understanding of African art. The piece that follows (translated by Susan Suleiman) was written in 1918.

Curiosity has found a new field of exploration in the sculptures of Africa and Oceania.

This new branch of curiosity, although born in France, has to this day found more commentators abroad. Since it originated in France, however, we have every reason to believe that it is here that its influence is being most deeply felt. These *fetishes*, which have not been uninfluential in modern art, are all related to the religious passion, which is the source of the purest art.

The interest of these fetishes lies essentially in their plastic form, even though they are sometimes made of precious materials. This form is always powerful, very far removed from our conceptions and yet capable of nourishing the inspiration of artists.

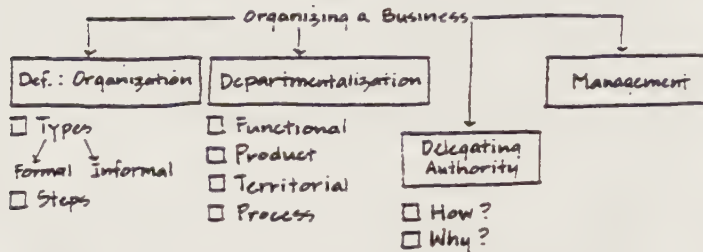
It is not a question of competing with the models of classical antiquity, but of renewing subjects and forms by bringing artistic observation back to the first principles of great art.

In fact, the Greeks learned much more from the African sculptors than has been noted up to now. If it is true that Egypt exerted an appreciable influence on the very human art of Hellas (Greece), one would have to be very unfamiliar with the art of the Egyptians and of the Negro fetishes to deny that the latter provides the key to the hieraticism and the forms characteristic of Egyptian art.

The enthusiasm of today's painters and collectors for the art of fetishes is an enthusiasm for the basic principles of our arts; their taste is renewed through contact with these works. In fact, certain masterpieces of Negro sculpture can compete perfectly well with beautiful works of European sculpture of the greatest periods. I remember an African head in M. Jacques Doucet's collection that can stand up perfectly against some fine pieces of Romanesque sculpture. In any case, no one today would dream of denying these evident truths, except ignorant people who do not want to take the trouble to look at things closely.

Source: Adapted from M. A. F. Witt et al., *The Humanities*, 3rd Ed., Chapter 32, pp. 343-364.
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WHAT IS AN ORGANIZATION?



An **organization** is basically a group of people striving together to achieve a common goal and bound together by a set of understood authority-responsibility relationships. Some important conclusions that can be drawn from this definition are that:

1. Organizations are made up of people. Machines, furniture, equipment, and other nonhuman elements are important, but they're useless without the human element. For instance, Hewlett-Packard Company is a leader in the high-tech electronics field. Yet its emphasis is on its people. It was a leader in introducing flexible work schedules and other innovative personnel policies. Employees share in the profits and they have job security: when semiconductor sales slumped in 1970, everyone in the company took a 10 percent pay cut, but no one was laid off. The company's philosophy that business should have meaning as well as make money has paid off in high productivity and top-quality products.
2. Organizations result from attempts to reach common goals, objectives, programs, and plans. Businesses, hospitals, schools, governments, and other organizations do now what individuals or families did a century ago. They help us reach our objectives.
3. Organizations are part of their cultural, political, social, economic, and technological environment. They must be dynamic and adapt to those surroundings if they're going to survive and fulfill their mission. For example, Bausch & Lomb, Inc. had roughly 90 percent of the soft contact lens market in the 1970s. But success blinded management to the fact that extended-wear soft lenses were the wave of the future. By 1982, the company's share of the contact lens market had fallen to about 55 percent. CooperVision, Inc. and Continuous Curve Contact Lenses, Inc. (a Revlon, Inc. subsidiary) now dominate the \$50 million to \$60 million extended-wear market.
4. Organizations must have order, discipline, and control if they're to succeed. Therefore, delegation of authority and placement of responsibility must be

Organizations

def. Ind. who try to achieve a common goal & are bound together by authority/responsibility relationships

Conclusions

1. Org. contain people - employees share profits & have job security
(ex.) Hewlett-Packard
2. Org. result from attempts to reach same goal.
3. Org. are pt. of our environment. Must be dynamic & adapt
(ex.) CooperVision & contact lenses
4. Org. must have discipline to be successful.
(ex.) Tandem Comput. Co.

Graphic Organizers, Sample Annotations, and Exams

well defined. An example of a well-organized business is Tandem Computer, Inc., which grew by 4,000 percent from 1976 to 1979. According to one of its founders, "We assume people are adults. We give them a lot of responsibility and tell them where we want them to go. The 1 percent who abuse the freedom, we fire. It's that simple."

Since people are social creatures, they live, work, and play together. They learn to organize and to depend on groups that will get more done than any one of them could alone. Once organized into a group, though, people must specialize if the group is to function well. The principle of specialization, or division of labor, states that the most efficient way to do something is for each person to do only what he or she does best instead of doing everything. It's the basis of any organization.

There are benefits and disadvantages of using division of labor. Some of the more important benefits are that (1) less skill is required of workers, (2) employees can specialize in the part of the work they can do best, (3) it's easier to train workers to do their part if it's kept simple, and (4) time is saved. Division of labor does have its negative side, though. It tends to cause monotony, boredom, loss of motivation, and downright frustration when carried too far. Also, as specialization increases, so does the need for coordination to see that each person's work fits with that of other employees.

Once organized, ind. must specialize = called division of labor > basis for any organization

Benefits of \div of labor

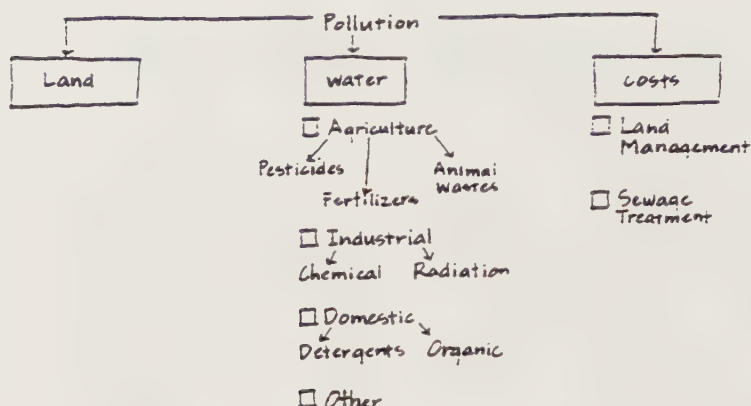
1. requires less skill
2. Specialize in pt. they do best
3. training is easier
4. Saves time

Disadvantages

1. Causes boredom & frustration
2. Requires more coordination

Source: Adapted from L. Megginson et al., *Business*, Chapter 7, pp. 166-190. Copyright © 1985 by D. C. Heath and Company.

AGRICULTURE



Water pollution from agricultural sources is usually not direct, but enters the water supply via runoff and groundwater absorption in areas of agricultural activity.

Pesticides

Pesticides may be subdivided into insecticides, herbicides, and fungicides. Their purpose is to kill some unwanted insect and plant species, usually for the promotion of an agricultural crop. There are a variety of other uses. For example, in the home, insecticides have all but replaced the pollutionless fly-swatter.

In modern agriculture, pesticides are essential to food production and other crop products to produce the yield required by our population. Without them, tons of agricultural products would be lost each year to pests. Prior to World War II mostly natural organic pesticides were used, which were easily decomposed in the environment. In 1939, DDT (dichlorodiphenyl-trichloro-ethane) was discovered and used extensively during the war to combat insects in tropical areas. Afterward, this effective agent was expanded to general agricultural use, but in 1972 the government banned the use of DDT in the United States. DDT is a chlorinated hydrocarbon that, unlike natural pesticides, is not biodegradable.

As a result of its extensive usage (worldwide) prior to this, DDT had accumulated in the environment. DDT residue was found in appreciable concentrations in animals, entering through the biological food chains. Even penguins in Antarctica were found to have DDT concentrations. DDT is only one of several chlorinated hydrocarbons used as pesticides. Other pesticides include arsenic compounds of calcium, lead, and mercury.

Agriculture (pollution fm)

- indirect fm. run off & fm H₂O being absorbed into ground

1. Pesticides

- types
 1. insecticides
 2. herbicides
 3. fungicides
- purpose → kill unwanted insects & plants
- essential to food prod. before WWII organic pesticides used, then DDT discovered & banned in '72. However...

DDT had already hurt environ. & damaged food chain

Graphic Organizers, Sample Annotations, and Exams

- Often will kill nonpests
or may have side effects
on other animal life.

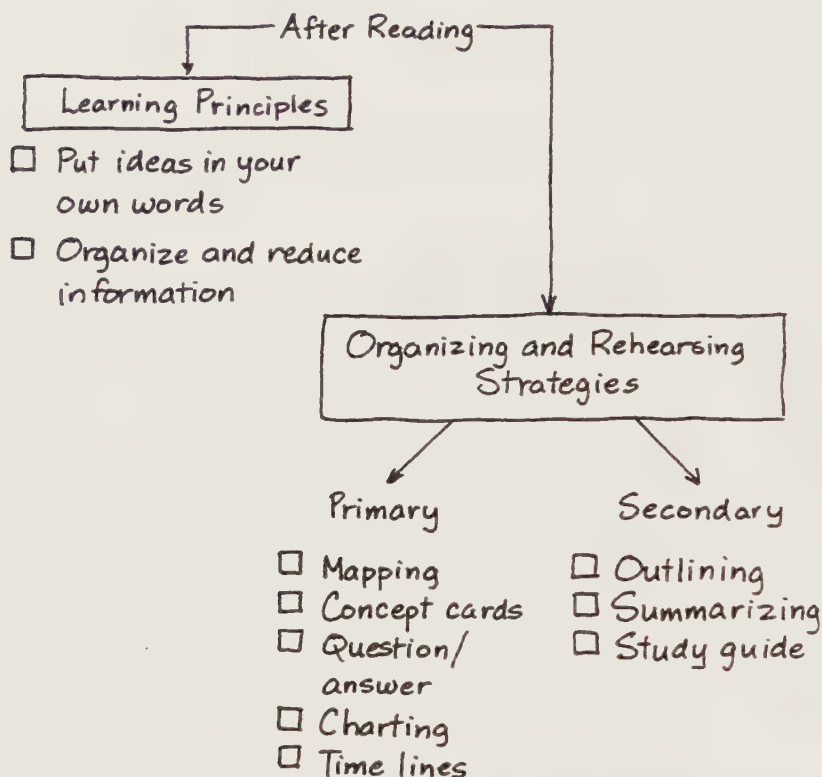
Pesticide pollution of water in appreciable concentrations poses critical health hazards. There are some 34,500 registered pesticide products composed of one or more of 900 chemical compounds. Although pesticides are usually sold for a specific pest, they often kill nonpest species and have side effects on the growth and reproduction of birds and fish.

Source: Adapted from J. Shipman et al., *An Introduction to Physical Science*, 5th Ed., Chapter 31, pp. 584–604. Copyright © 1987 by D. C. Heath and Company.

CHAPTER

8

After You Read



Perhaps the most important phase of studying occurs after you read a text or hear a lecture. We forget almost everything we read or hear very rapidly, unless we make efforts to remember it. Therefore, if you merely read a chapter, even if you intend to remember it, chances are that you will forget most of it by the next day, and you will have wasted a great deal of time in the process.

Think about the following situation. You look up the number of your dentist in the telephone directory so that you can call and make an appointment for your yearly checkup. Right after you look up the number, your roommate interrupts to ask about a psychology assignment that is due at the end of the week. After you finish explaining the assignment (it took less than one minute), you return to make your phone call. What do you think has happened?

Unless you frequently call your dentist's number, you probably will have forgotten the phone number. Why? Because the only thing you did was get the information into short-term memory. You probably did not do anything to attempt to memorize the number, because you thought you were going to call right away.

Now think about the implications the dentist scenario has for learning from a textbook. If the only thing you do is to begin on the first page of the chapter, read to the end, and close your book, how much of the material are you going to remember? You probably will not remember very much because you need to interact actively with the text's information and "chunk it" into meaningful units to remember it. Unless you use additional strategies, you will probably have to reread the complete chapter before a test, just as you would have to look up your dentist's telephone number again. By spending some time immediately after you read to organize the material and perform rehearsal strategies, you will improve your memory up to three times. You are spending a little more time but remembering so much more—a much more effective use of your time!

The organizing and rehearsing phase of PROR is based on several new learning principles (as well as those already mentioned).

Learning Principles

Principle 7: Put the Ideas in Your Own Words

If you simply *read* a textbook chapter, you will probably remember less than one-third of what you read by the following week. In two months, you will remember about 14 percent of the material—hardly enough to do well on a test. In order to transfer a greater portion of the material you read from your short-term to long-term memory, you must do something active with the information to help "fix" it in your memory. If you take time after reading each section of the chapter to organize and rehearse the information, you will ensure that more of it goes into long-term memory. If you rehearse, you are likely to remember 80 percent of what you read after a week and 70 percent after two months!

One way to ensure the greatest amount of understanding is to rehearse *in your own words*. In the last chapter we discussed the importance of putting information in your own words when you annotate. The same prin-

ciple holds true for rehearsing—if you can put the important material in your own words, you probably understand it and thus will be better able to remember it at test time.

Principle 8: Organize and Reduce the Information

As mentioned earlier, it is impossible to remember everything you read or hear. Therefore, one of the major purposes of using rehearsal techniques is to organize and reduce the material to an amount that can reasonably be learned. If you apply the strategies discussed in this chapter, they will make your job easier. Becoming proficient in organizing and reducing both lecture notes and text is a necessity if you want to do well on tests. Students often defeat themselves by trying to learn too much material by memorizing many isolated facts. They are not going to do very well on exams, because they are unable to synthesize information. It is therefore imperative for you to learn a variety of rehearsal strategies, so that you can put new information in your own words, organize, and reduce the material to an amount that can feasibly be rehearsed and remembered.

Organizing Through Rehearsal Strategies

In the next section, we will present numerous rehearsal strategies that will help you organize and reduce information. These strategies have been divided into two key types—primary rehearsal techniques and secondary rehearsal techniques. Primary strategies are those that, in our eyes, are more efficient and effective strategies that can be used in a variety of learning situations. In addition, this group of strategies focuses on self-recitation; that is, each strategy, in some way, provides questions or cues to help you learn, but conceals the “answers” as a check to see if you actually know the information. For example, concept cards present only the term and a memory cue on the front; you cannot see the definition or example because it is on the back. The memory cue should spark the definition. You say the definition and give the example. Then you turn over your card to check for accuracy. In other words, the primary rehearsal strategies have a built-in monitoring element. You receive immediate feedback as to whether your answer is correct.

On the other hand, secondary strategies do not have a monitoring element built in and are more traditional types of rehearsal devices. These are strategies that you may have used to help you succeed in your high school classes, but are probably neither as efficient nor as effective as the primary strategies. We include them here because they can serve learning purposes

in specific situations for specific types of students. We recommend use of the primary strategies most of the time, but there may be some instances where secondary techniques would be appropriate.

Primary Rehearsal Techniques

Mapping

Some material, especially that contains a good deal of new terminology or that requires a considerable amount of organizing, can be better understood and remembered if you can actually see the relationships in the material. These graphic representations are sometimes called *maps* or *graphic organizers*. Maps such as those given at the beginning of each chapter of this text show how ideas and terms are related, which aids your comprehension and memory of material. Mapping should both improve comprehension and aid memory and retrieval.

When constructing your map, first preview the section and ask questions to guide your reading as outlined in Chapter 6. Then read the section. Immediately after you read and annotate, make a jot-list that includes the key terms and/or concepts. Finally, using your jot-list, make a map that includes most or all of what you listed. Keep in mind that in all likelihood, you will have to construct more than one map to cover all of the important material. Also keep in mind that if you do a good job of annotating your text, the annotations can take the place of the jot-list from which to draw the key terms and/or concepts.

Figure 8.1 shows a generic map. In making your map, decide on a single key term or concept. Put that in the middle. Then decide in what class of things that term or concept belongs, and put the class above the key term. List the definition(s) of the key term. List and put the class above the key term next to it. Next, place any subcategories of terms or concepts below the key term. Finally, put specific examples lowest on the map, with their definitions out to the side if further clarification is necessary.

The way you actually construct your map may differ slightly from the method described here; in fact, you can map in many different ways. The main point is to graphically organize the relationships among concepts, terms, and examples. As you study, try mapping the information in different ways. By making up your own type of map, you will be rehearsing the information, consolidating it, and giving it an organization that is meaningful to you.

Now let's look at an example. Read the following paragraph, and then map the concepts. Remember,

you can construct your map as you wish, so long as the relationships are clearly delineated.

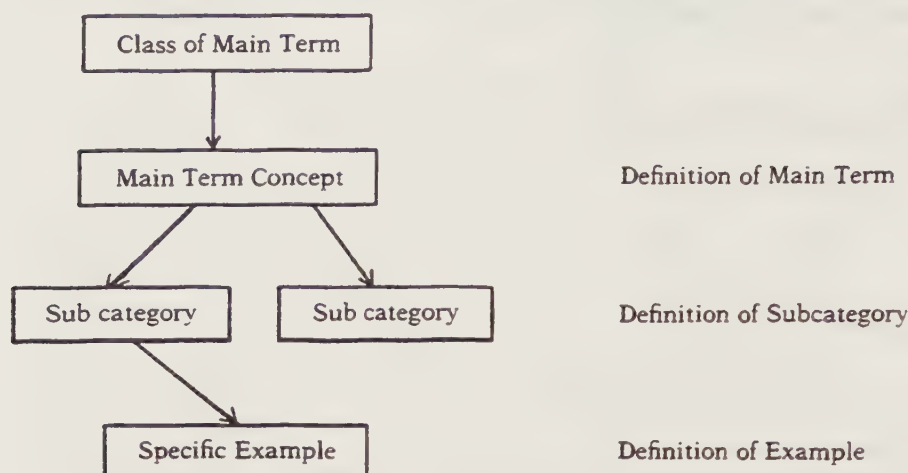


Figure 8.1

Example of a Generic Map

Source: Drawn from P. D. Pearson and D. D. Johnson, *Teaching Reading Comprehension* (New York: Holt, Rinehart and Winston, 1974).

Glands are epithelial tissues specialized for secretion. Endocrine glands are glands that secrete their products into the bloodstream (or, more precisely, into the extracellular space from which substances diffuse into the bloodstream). Exocrine glands secrete their products into ducts; examples are sweat glands and digestive glands.

Compare your map to the one in Figure 8.2. While this is a very simplistic map, it gives you an idea of basic organization and lets you see how the concepts are related.

Now let's examine a longer piece of text more similar to the kinds of information you would need to map. Obviously you should not make a map for every paragraph. Doing so would lead to fragmented learning and would defeat the purpose of devising maps. Rather, it is best to map sections from the text or key concepts. The example shown in Figure 8.3 shows a partially completed map depicting the 1968 presidential campaign drawn from the "Stormy Sixties" chapter found in the Appendix (pages 229-248). Note that there are four key elements to the map: Democrats, Republicans, Independents, and Overall. Each concept also has certain key information organized under it. It is easy to see from the map that there were three main contenders for the Democratic nomination while only one for both the Republicans and Independents.

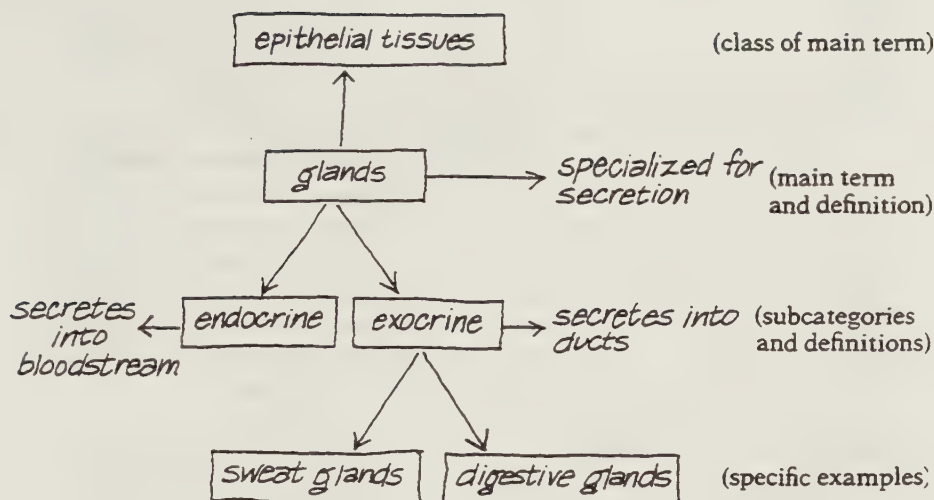


Figure 8.2

Map of a Paragraph from a Biology Text

When using your maps to rehearse, cover up everything except the four key concepts. Say the information that goes with each concept, then immediately check to see if you are correct. If not, recover the material, and try again. Once you say the information correctly, say it several times to put it into long-term memory.

Application Exercises (DTT)

1. Complete the map on the 1968 presidential campaign in Figure 8.3. Use the dashes on the map as cues for the minimal amount of information that you should include. Remember to make your map more detailed if your background knowledge in this area is weak.
2. Construct a map of the civil rights movement during the Kennedy and Johnson administrations.
3. Map appropriate sections of the Appendix chapters as your instructor assigns.

Application Exercise (Your Texts)

From the texts you are presently using in your college courses, find appropriate segments to map. Discuss these maps with your instructor. Remember to map entire sections or concepts, rather than paragraphs.

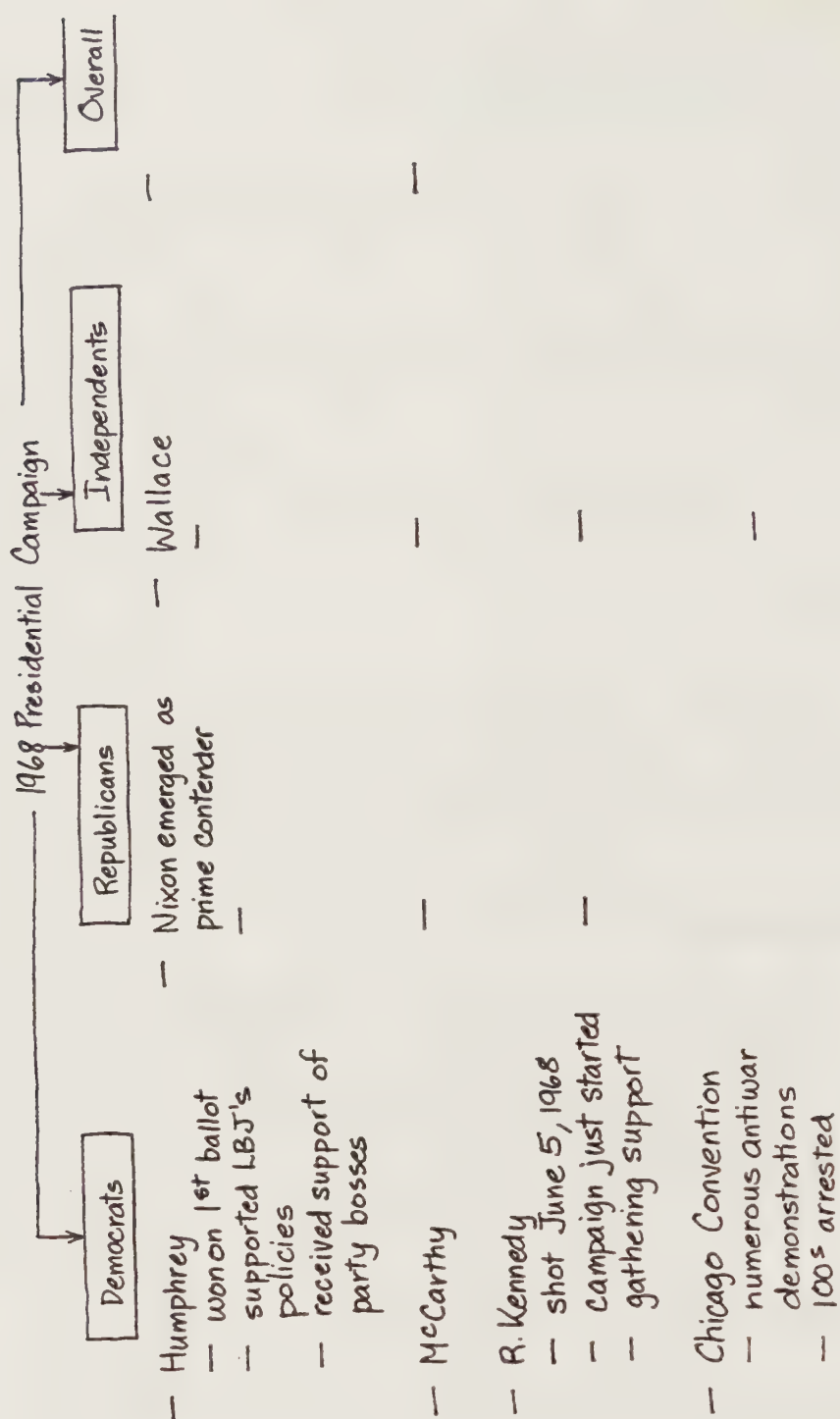


Figure 8.3

Partially completed map from a "Stormy Sixties" excerpt

Concept Cards

Another primary rehearsal strategy is concept cards. Concept cards lend themselves well to studying and learning factual material. Of all the rehearsal techniques presented, there is a good chance that you have used concept cards without actually calling them that. The procedure is quite simple: Write the term, person, concept, or the like on one side of an index card and its definition, description, or related idea on the reverse side of the card. Often it helps if you use some sort of a mnemonic device, or memory technique (see Chapter 9), to help you remember what the concept means. For example, if you wanted to learn the term “hedonism”

your card might look like the one in Figure 8.4. On the front of the card is the term, a mnemonic device (in this case a simple drawing) to help you remember what the word means, a key term in the upper right-hand corner for organizing purposes, the person associated with the term, and the page number. On the back is the definition, the mnemonic device, and an example.

Using concept cards has several advantages. The major advantage is that as you learn the terms or concepts you can separate out their cards so that you have one pile of cards on material that you know and another pile that you need to study further.

A second advantage is that the cards are easily carried around. If you have fifteen or twenty minutes free or want to review during lunch or between classes, you do not need to rifle through sheets of paper or a text. The information you need is on a separate card. Concept cards are particularly valuable in courses such as biology or psychology, where many new terms are introduced rapidly.

A third advantage of concept cards is that although they are generally recommended for use with factual material, they also can be valuable for key essay responses. Pulling together the information from several cards can form the basis for a good essay answer.

Finally, concept cards can help organize concepts by using the concepts to create maps. To form maps, use the key word in the upper right-hand corner as your guide. First, group all cards that have the same key term together. Then arrange the cards in such a way that it is easy to see which terms are related and how they are related.

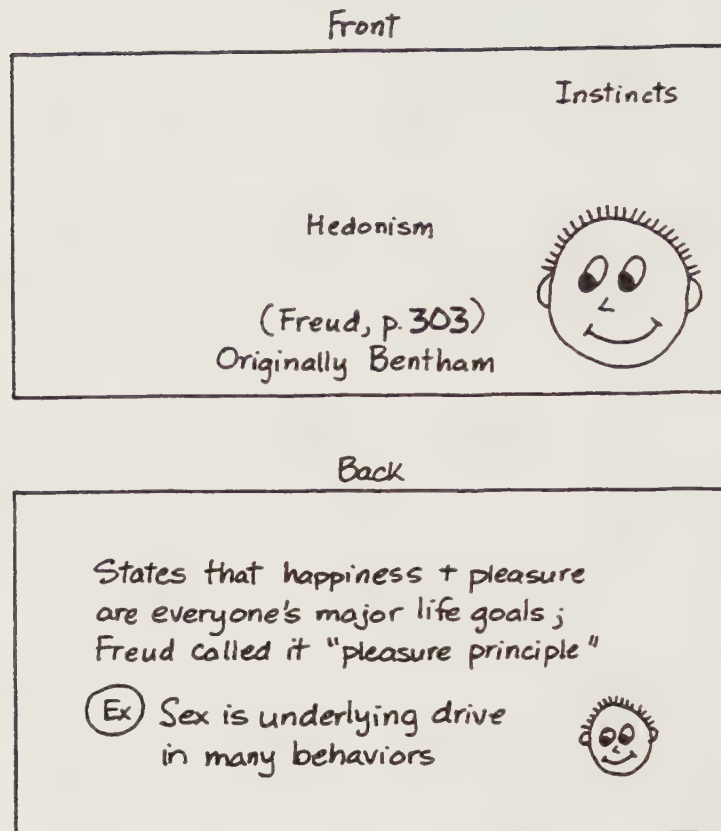
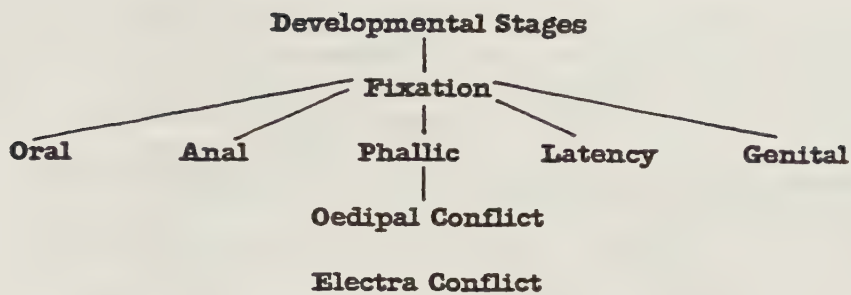


Figure 8.4
Example of a Concept Card



Application Exercise (Your Texts)

From the texts you are presently using, make concept cards for new terms or concepts. When appropriate, use your cards to help you predict and answer essay questions or organize key terms into maps. Discuss your concept cards with your instructor.

Question and Answer

The third primary rehearsal strategy is the question/answer technique. One way to carry out this strategy—surely the quickest way—is to look up from your book after each section and answer the questions you posed for that section. Use your own words, and refer to the book only to check yourself. Stopping after each section and rehearsing the answers to your questions will help you to check your memory and comprehension.

The drawback to merely rehearsing the answers is that you have nothing written down that you can use later for review. A second purpose for rehearsing is to reduce the amount of information for later study. Recall the Chapter 7 discussion of annotating. Proper text marking reduces the amount of information you must learn and serves as a guide for your question-and-

answer sessions. Instead of having to reread entire sections, you can simply review your questions and answers, your notes, and the annotated material. This technique allows you to review only about one-third of the information in a chapter, but it is *key* information and will usually remind you of other supporting information in the section. Rehearsing, therefore, involves putting information into your own words, and organizing and consolidating the information for later study.

The second way to use questions and answers, then, is to write them out; doing so gives you reduced information in a very easy and adaptable framework for later study and review.

To use the question-and-answer technique effectively, follow these steps:

- *Before* you read each section, predict some possible test questions as outlined in Chapter 6.
- *After* you read each section, on the left-hand side of a sheet of paper, write down several key questions. Be sure you leave enough room to write down complete answers.
- *After* you read each section, close the book and write answers to the questions in your own words on your paper.
- *Refer* to the book to answer any questions you could not answer before and to check your other answers. Also, refer to the book to answer any questions you may have answered inadequately.

When you go back to rehearse the section, do the following:

- Cover up your answers or fold your paper back.
- Ask yourself each question, and try to answer it.
- Check each answer against what you wrote. If you were right, put a check next to your question. The check tells you that you know the answer and will not need to spend more time rehearsing it until you do a comprehensive review before a test.
- If you were wrong, cover up the answer, ask yourself the question again, and rehearse the answer. When you are finished with all of the questions, go back to the ones you missed the first time and go over them again. Answer each question you missed correctly three times. This technique will prevent you from remembering your wrong answer:
- If you do not understand your answers, or if you feel you need to study the topic further, return to your book and review the section. Then add any new information to your original answer. (See Figure 8.5.)

The question-and-answer technique initially may seem a bit burdensome or time consuming. But as with most of the other rehearsal strategies in this chapter, students will find that it suits them some of the time and with certain kinds of materials. One major reason for using this strategy is that it forces you to predict test questions. But do not fall into the trap of writing all memory-level questions; write some higher-level questions as well, so that the technique is appropriate for both objective and essay tests.

8 After You Read

Questions

1. List and discuss 3 significant civil rights events that occurred in the early 1960s.
2. What was G. Wallace's stand on segregation in the South?
3. What effects did the march on Washington have on the civil rights movement?
4. Why were the voting rights of blacks a major issue in the civil rights movement? What legislation affected black voting rights?
5. Why did the demonstrations by blacks in the mid 60s become more vocal and violent?

Answers

1. — James Meredith — integration of U. of Miss. (Oct. 1962)
— emergence of M.L. King, Jr. as a leader in civil rights movement
— Birmingham demonstration (Spr. 1963)

Figure 8.5

Question/Answer Technique on Civil Rights

Application Exercises (DTT)

1. Complete the question/answer technique started for you in Figure 8.5. Write at least five additional questions and answer them. Make sure that you use the correct format.
2. Select an appropriate section of the “Stormy Sixties” chapter and write 10 good questions. Make sure you write a blend of memory and higher-level questions. Then answer your questions. Check the format you used. Have you put the questions on the left and the answers on the right so that you can monitor your learning?
3. What other chapters or sections of chapters from the Appendix would be appropriate for using the question/answer technique?
4. As you preread, annotate, and organize the chapters in the Appendix, use the question/answer technique appropriately. Discuss with your instructor the effectiveness of your questions and answers. If you have a study partner, use your questions and answers with him or her.

Application Exercise (Your Texts)

From the texts you are presently using, use the question/answer technique for a chapter or a portion of a chapter. Use the questions with your study group as a way to check for understanding of the chapter.

Compare/Contrast Charting

Another primary rehearsal strategy is compare-and-contrast charting. If you are reading a text that contains information on which an instructor might test you by asking for similarities and differences, charting is a good approach to use. Suppose you have completed reading the “Stormy Sixties” chapter from the Appendix. Your professor has told you to make sure that you can compare and contrast the Kennedy and the Johnson administrations. Your chart might be set up something like the one in Figure 8.6.

Note that the two presidents, JFK and LBJ, are listed horizontally on the chart. Categories for which they can be compared or contrasted are listed vertically. It is very important when you do charting to think about the categories for which you can compare or contrast subjects. Some students err by trying to compare apples with oranges, using “however” as a catchall connector. For example, if you were asked to write an essay comparing and contrasting these two presidents, you might include the following statement, based on your chart, as part of your essay answer:

Although both Kennedy and Johnson had strong political histories, the similarities in their backgrounds ended there. Kennedy was part of old New England money, whereas Johnson, though relatively wealthy, had

only recently become rich. Kennedy was highly educated and graduated from Harvard University, while Johnson attended a small state school in Texas. Because of Kennedy's upbringing and educational advantages, he was knowledgeable about the fine arts and was interested in cultural activities. Johnson, on the other hand, always felt inferior when it came to the arts.

	JFK	LBJ
Background	Wealthy Harvard educated Charismatic Old MA \$	Texas senator Demo. majority leader (1954) Long political history "Wheeler-dealer"
Political Beliefs	Liberal	Initially conservative; became more liberal during stay in office
Civil Rights		
Domestic Policies		
Foreign Policy		

Figure 8.6

Compare/Contrast Chart for Kennedy and Johnson Administrations

Students who fail to categorize characteristics might write something resembling the following:

II *Developing College Reading and Studying Strategies*

Kennedy was raised in a wealthy family and became involved in politics at an early age. When he became president, Kennedy was very young. His political beliefs would be classified as liberal.

However, Johnson was a Democrat with a long political history. When he first came into office, Johnson was relatively conservative, but he became more liberal as time progressed.

In the first example, the student was able to use the chart to compare and contrast Kennedy and Johnson on specific characteristics. The second student fails to compare or contrast adequately and merely lists a series of facts about the two men. Phrases such as “however” and “on the other hand” do not automatically make a good compare/contrast answer.

Although you may have to return to your text or lecture notes for clarification, compare-and-contrast charting briefly indicates the most important information. The charts are also helpful to use immediately before a test as retrieval cues to help you to think through the important material. Remember that one of the key learning principles is reducing information. Charting not only helps to reduce information but also highlights major similarities and differences. This technique is most appropriate in situations in which you need to compare or contrast; but it is probably *not* appropriate in situations in which you need to learn a great deal of factual material (for example, in biology and chemistry). The charting strategy is rarely appropriate for an entire chapter. Rather, it should be used only for specific sections in which theories, ideas, concepts, and the like are compared or contrasted.

Application Exercises (DTT)

1. Complete the chart in Figure 8.6 that compares and contrasts JFK with LBJ. Then, think about how this information could be asked as objective test items. Predict an essay question based on the information on your chart.
2. Select another appropriate section of the “Stormy Sixties” chapter to chart. If you have a study partner, discuss the categories you selected with him or her.
3. As you work through the chapters in the Appendix, chart appropriate sections as your instructor makes assignments.

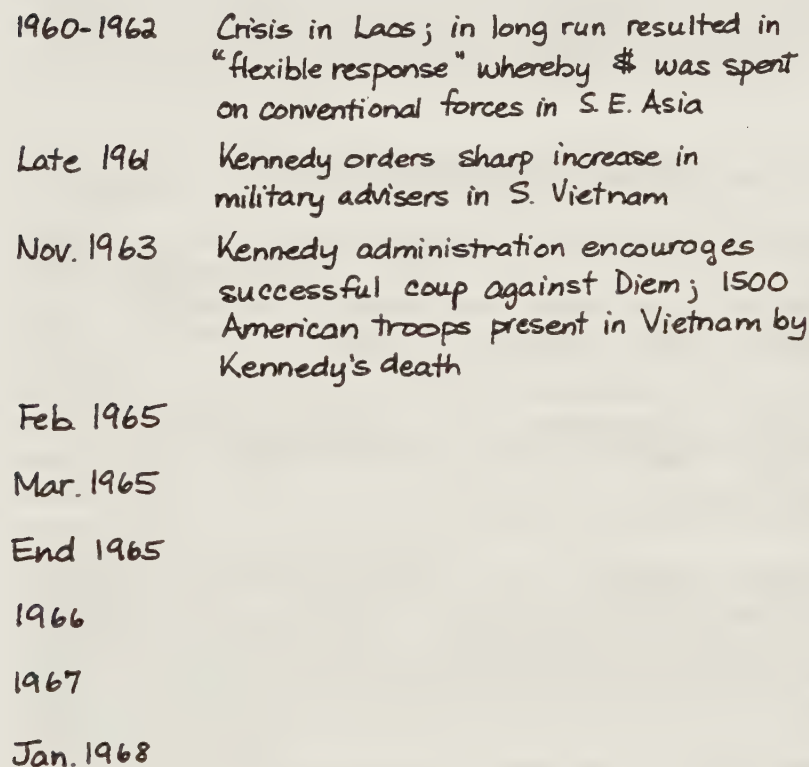
Application Exercise (Your Texts)

From the texts you are presently using, find several sections of chapters that would be appropriate for charting. Chart these sections or concepts and discuss them with your instructor. Use them to predict and answer both objective questions and essay questions.

Time Lines

The final primary rehearsal strategy is that of time lines. Time lines function exactly as their name implies—they help fix events at a certain place in time. They can encompass relatively brief periods of time, as would a time line showing the expansion of the Vietnam War in the early 1960s. They can also cover decades or centuries, as might a time line depicting the civil rights movement. Time lines are easy to make and work extremely well when studying chronological events in a history or humanities course.

To construct your time line, first decide on the period of time you want it to encompass. Then, using regular notebook paper, put the beginning date in the left-hand margin as shown in Figure 8.7. Write in the event that occurred on that date. Continue writing key dates down the left-hand margin and key events next to the date.



A handwritten time line on lined paper. The left margin contains dates, and the right side contains corresponding events. The entries are as follows:

1960-1962	Crisis in Laos; in long run resulted in "flexible response" whereby \$ was spent on conventional forces in S. E. Asia
Late 1961	Kennedy orders sharp increase in military advisers in S. Vietnam
Nov. 1963	Kennedy administration encourages successful coup against Diem; 1500 American troops present in Vietnam by Kennedy's death
Feb. 1965	
Mar. 1965	
End 1965	
1966	
1967	
Jan. 1968	

Figure 8.7

Time Line of Action in Vietnam During Kennedy and Johnson Administrations

To rehearse using your time line, simply fold back or cover up the events and use only the date as a cue. If you do not know the event that is associated with a date, look at the event several times and then try to say it blindly. Do this for each date/event to ensure that you have learned the chronology of events accurately.

Application Exercises (DTT)

1. Complete the time line in Figure 8.7. Check with your instructor to see how much detail is expected. Use your time line to talk through the chronological events. Remember to fold back the part of the paper containing the “answer” and use only the date to cue you.
2. For which other chapters from the Appendix would a time line be appropriate for some concepts? (Remember that time lines are best suited for chronological events.)
3. After practicing all of the primary rehearsal strategies, which one(s) do you feel most comfortable with? Why? Write a journal entry that addresses these two questions.

Application Exercise (Your Texts)

Apply the time line strategy to one of the texts you are presently using. Since this strategy is best used in situations where events are presented chronologically, you may not be able to apply it to all of your present texts. If such is the case, complete the above exercises designed for DTT.

Selecting the Most Appropriate Strategies

After reading Chapters 6, 7, and 8, it should be apparent that prereading, annotating, and organizing require some decisions. Some students will require more extensive and involved prereading activities, while others will require only minimal previewing. Likewise, some students will need to annotate considerably more information as they read and isolate key concepts in the text’s margins. Keep in mind that both prereading and annotating depend heavily on the background knowledge you have about a particular topic and on the density of the material you are going to read.

As you progress to the third phase of PROR, organizing, your continued interaction with the text and your decisions about which strategies to take depend more heavily on the text itself. As noted in this chapter, some strategies are most efficiently and effectively used with factual material or for

courses in which you must memorize numerous new terms. Such texts or courses might include biology, chemistry, and psychology. Other strategies are best suited for learning information where higher-level applications or syntheses are expected. Strategies such as compare/contrast charting and the question/answer technique help you predict higher-level questions and isolate the appropriate information to study for this type of test. Other strategies, such as time lines, are used only in very specific situations. While a time line may be appropriate for learning chronological events, it would be very inappropriate to use to try to understand key terms. Mapping can be viewed as the strategy most appropriate for many different kinds of information. We often tell students that they can rarely go wrong if they select mapping. Maps not only isolate important information, but they also organize the information around major ideas.

Some of the primary rehearsal strategies introduced in this chapter you will find useful and will continue to employ long after you complete this course. Others you will try out here and will never use again. The important thing is that you have been exposed to many strategies and have learned under what circumstances each is most efficient and effective. In addition, each primary rehearsal strategy has a monitoring and self-regulatory element built in.

Secondary Rehearsal Strategies

Outlining

Outlining is a means of showing major concepts, major supporting details, and examples by numbering and indenting. Outlining reveals the organization of information. Even though outlining a chapter can be the most complete rehearsal strategy, we do not recommend it because it is so time-consuming. It is also often less effective than some of the other strategies discussed in this text. However, we include outlining as an alternative, because many students find it useful on complex material. Outlining forces them to go through the material slowly and carefully.

If you are a student who finds outlining a valuable learning strategy, keep the following ideas in mind. They may help you to improve your efficiency. As with highlighting, many students outline while they read a section for the first time. This practice may help concentration, but it does not help them to be selective. It is not as helpful for remembering as is outlining *after* reading a section for the first time.

A second error students often make is to include too much detail in their outlines. Remember that one of the reasons for rehearsing is to reduce the amount of information you need to review. To help reduce the information, use only key words or phrases. Do not write complete sentences, and include only information that you do not already know. There is no reason to outline

known information. Why write down what you already know? If graphic examples are used, include a key word or phrase from the example. Graphic examples serve as good “memory hooks.” Because examples are often easier to remember than the main points, include them (very briefly) in your outline so that they will “hook” your memory for the main points.

In short, outline after you have read a section once, and reduce the information as much as possible. Follow the steps below (note that they are similar to those followed for mapping):

- Preview the chapter. Formulate questions.
- Read one section at a time to answer questions and to find other major information. Annotate *as* you read.
- Answer your questions to yourself.
- Check the text to make sure your answers are correct. Then construct an outline, using your own words and organization. Let your annotations guide you.

Summarizing

Summarizing a section of a textbook is usually effective if the section is not particularly detailed, if you already know most of the material, or if the summary is used as a secondary technique, usually as you review.

The purpose of a summary is to state the most important points and a few major supporting details. The summary should be as brief as possible; it actually serves to get you to consolidate a great deal of information into a few sentences or phrases. For this reason a summary is not effective for detailed information that you are unfamiliar with. It is almost impossible to be brief in such a situation.

Summaries are perhaps most useful as a secondary rehearsing technique. First you annotate the text as you study the material. Then, when you go back to review what you marked, you might write a brief summary after each section. The summary forces you to rehearse the information and therefore to remember it.

Writing summaries is an especially good idea when you know you will have essay questions on a test. Essays usually require you to take a great deal of information and organize it concisely in new ways (see Chapter 11). Preparing summaries for each question helps you to prepare for tests. It also helps you to fulfill the principle of test-anticipation.

In this section, we will practice summarizing as a secondary rehearsing technique. You can also use it as a primary rehearsing technique with some types of materials—for example, social science—if you know the tests will contain essay questions. However, in most cases, other strategies are probably more efficient and effective.

To use summarizing as a secondary rehearsing technique, you should do the following:

- Review the text section by section. Review by posing questions, answering them, and checking your answers against what you had annotated or against your notes.
- When you are finished with each section, ask yourself: What was the most important point or points in this section? Write these points down first either as phrases or as sentences.
- Ask yourself: What are the two or three major supporting details? Write these points down next.
- Ask yourself: Were there any graphic examples that will help me to remember the major details? If there were, jot them down.
- Put the information into your own words.

Remember that you are trying to be as brief as possible. It is not necessary to write an essay or to follow typical grammatical rules. You can simply list major points and still have a summary.

It might help if you imagine that your summary is a telegram. When writing a telegram, people try to be very brief, because they have to pay for

each word, but they cannot be *too* brief, because they are trying to get a clear message across. Imagine that your summary is a telegram to yourself. You are preparing it now and will “receive” it (as you review it) in a few weeks. Do not make it long and expensive, but do not make it so short that you will not understand the message several weeks later.

Study Guide

In high school classes, you may have had teachers who gave you a study guide to go with your text. In this study guide were reading instructions, questions, and perhaps summaries of the material.

The last of the secondary rehearsal techniques we will discuss is the study guide. It has the same purpose as the guide your teacher might have given you: It tells you exactly how to study the information. But now you are making up the study guide yourself, giving yourself directions on how best to study the chapter later. In doing so, you have to decide what you should and should not review, and in the process, you are also rehearsing the chapter.

You can make a study guide either by annotating in the margin of the book or by writing notes on a separate sheet of paper. The margin of the book is preferable, because it lets you refer back to the text easily. Comments you can make to yourself in the study guide would include:

- rereading directions (“read this paragraph very carefully”; “details—read if unclear”; skim this section”)
- test-prediction questions (“Why did LBJ allow the Vietnam War to escalate?”)
- terms to review (*epithelial*, *endocrine*)
- summary notes to remind you of major information (“This could also be in the form of a map.”)
- cross-references to other parts of the text or to your lecture notes (“Explained in lecture.”)

Follow your study guide when you review. According to your directions, reread portions of the text, answer questions, or define terms. Then as you feel that you have mastered material, cross out your study guide notes for that material. As you go along, you reduce the amount you have to review, because you are transferring the information to your memory.

This study-guide technique works best as a secondary rehearsal technique, as we have said. You might first underline and annotate a chapter and then make study notes the first time you review a chapter. A study guide is useful as a primary rehearsal technique with material that is not too complex or with which you are already somewhat familiar.

Key Ideas

1. Organizing and rehearsing are based on two key learning principles: putting ideas in your own words and reducing the information to be learned.
2. Rehearsal strategies can improve your memory by up to three times.
3. The primary rehearsal strategies are mapping, concept cards, question-and-answer technique, compare/contrast charting, and time lines.
4. The secondary rehearsal strategies are outlining, summarizing, and making a study guide.
5. The rehearsal strategies you use most frequently depend on:
 - the type of material you are studying
 - your background knowledge of the material
 - your instructor's test questions
 - your own learning preferences
6. Using rehearsal strategies forces you to be an organized, active reader.
7. Experiment with different strategies in the chapters in the Appendix to find out which strategies work best for you.

Application Exercises (DTT)

1. Use the first one-third of "Stormy Sixties" up to the heading "The Black Revolutionary Outburst" and try out two of the secondary rehearsal strategies of outlining, summarizing, or making a study guide. Try to select two that are most appropriate for this section of the chapter. For other types of material, different rehearsal strategies may be more appropriate.
2. Write a journal entry (see Chapter 1) that discusses which secondary strategy you think is most beneficial for "Stormy Sixties." Explain why you selected the strategy that you did.

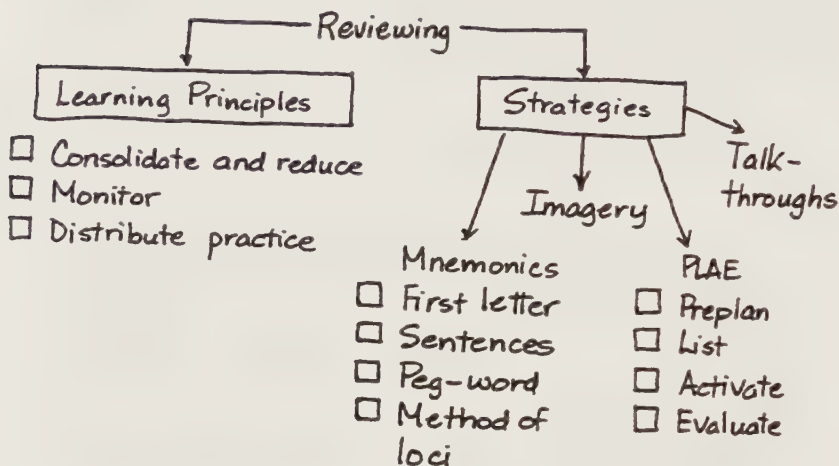
Application Exercises (Your Texts)

Try out one of the secondary rehearsal strategies on your own text. The strategy you select depends on the courses in which you are enrolled.

CHAPTER

9

The Day After: Reviewing



In addition to rehearsing, you can improve your memory for material by reviewing it several times. Many students wait until just before a test to review. Then they find that there is too much material to review thoroughly, and they have to stay up all night to cover it all. However, if they would take that “cramming” time and spread it out over the term, reviewing a little bit at a time, they would remember much more and do better on the test. Reviewing is based on three final learning principles: further consolidation or reduction, monitoring learning, and distributing study time.

Learning Principles

Principle 9: Further Consolidation or Reduction

If you are studying and are suddenly interrupted by something that demands your full attention, you tend to forget some of what you were studying. Often you can remember information studied a minute or more before the interruption but not the information studied immediately before the interruption. The same kind of forgetting can happen to people who are in accidents. They can remember everything that happened until about a minute before the accident. The reason we forget is that our minds need time to sort out and consolidate information before we can remember it. The interrupted student or accident victim has had no opportunity to consolidate, and thus transfer the information to long-term memory.

Consolidation involves organizing the material, rehearsing and pondering it, and giving yourself time to commit the information to memory. It also involves taking all the pieces of information and putting them together (*consolidating* them) into larger, meaningful units. Considering all the information that students have to read and study, it is vital that they allow time for consolidation.

Principle 10: Monitor Learning

One major studying problem college students often face is the inability to monitor their learning. Although monitoring is important during every phase of learning, it is particularly important when preparing for tests. It is precisely at this time, however, that students often experience particularly intense problems in pinpointing and verbalizing their level of exam preparedness.

Being able to monitor your learning involves two key processes. First, you must be able to determine that you really understand the information. Students who can effectively monitor their progress can verbalize their learning by telling you exactly what they know very well and exactly what areas they are weak in. For example, a friend might say that she understood what Freud had to say about developmental stages but had no idea about the id, ego, and superego. Second, once you have targeted what you don't understand, you must know what to do to help you learn this information better. The student in the example might seek out someone to explain these concepts to her and might subsequently construct a map illustrating the relationship among the id, ego, and superego.

A final aspect of the monitoring process involves having a good idea of the grade you will receive once you have completed the exam. You should be able to predict your grade within at least one letter grade; students with good

monitoring skills can predict their grades even more accurately. If you leave the testing situation and predict that you scored a *B* on the exam and you actually scored a *C*, you have been relatively accurate in your prediction. However, if you predicted that you got a *B* and then you found out that you actually failed the test, you need additional work on monitoring your learning. Later in this chapter we will provide some monitoring pointers.

Principle 11: Distribute Study Time

As mentioned earlier, you forget material that you do not rehearse and review. One of the keys to effectively learning all the information for which you are accountable in college classes is to distribute your study time. To do so, you must discover your best study times, determine how long you can reasonably study at one time and, most important, manage your study time as discussed in Chapter 3 so that you can rehearse and review material several times. Because each time you review the same material you learn more of it, later reviews can be briefer than earlier reviews. It is much more effective to study a chapter one hour today, half an hour tomorrow, fifteen minutes the next day, and fifteen minutes before the test (for a total of two hours) than to study the same chapter for two hours at one time, with no review. You would spend the same amount of time both ways, but your comprehension and memory for the material will be roughly three to four times as great by distributing your study as by cramming.

Reviewing

Reviewing material can be very tedious unless you have some goal in mind (a goal, for example, is to study for tomorrow's test). Reviewing is usually a passive process; students just "look over" their texts or lecture notes. The trick to effective reviewing is to make the process more active, to set goals for each reviewing session, to continually consolidate information, and to actively rehearse.

Ideally, you should distribute your study time and consolidate information so that you can review each chapter a little less each day with fewer notes and cues. By the time the test comes, you could have all the information down to two or three note cards with key terms on them to help cue retrieval.

To distribute study time and be more active when reviewing, use the techniques discussed throughout this text. For example, you would first preview a chapter and formulate your prediction questions. If the chapter is a long one, you would want to divide the chapter in half—reading and annotating half of the chapter one night and doing the same to the rest of the chapter the next night. The following day, use your annotations to apply the appropriate rehearsal strategies. During the fourth session, study your re-

hearsal strategies, further reducing and consolidating when possible. By now you should be studying only about one-tenth of the original information.

Each day you will have less to review because you have continued to consolidate. For example, if you have used the question-and-answer technique, check off the items you already can answer. Concentrate on the questions that give you trouble. As you feel comfortable with more information, continue to check it off. If you have used concept cards, remember that one of the advantages of this rehearsal strategy is that you can divide the cards into two piles—those you know and those you don't know. Don't completely ignore known information, but concentrate on the material that is most difficult for you.

A word of caution is in order here, however. Be careful about getting a false sense of what you know and what you don't know. By this we mean that simply "looking over" information rarely puts it into long-term memory. Say the information by talking through it (more about talk-throughs later in this chapter). Suffice it to say here that when you use the cues from your rehearsal strategies or from your lecture notes, say the information aloud or teach it to someone else as proof that you do know it.

Strategies to Help in Reviewing

Mnemonic Devices

At the beginning of this text, we stated that being successful in college courses requires much more than memorizing facts. Although this statement is certainly true, some memorizing will be necessary. Mnemonic devices can be valuable for memorizing certain types of factual material.

Think back to when you were in elementary school. You probably learned sayings such as:

- "I before e except after c, or in words sounding like a, as in *neighbor* or *weigh*,"
- Thirty days have September, April, June, and November. All the rest have 31, except February, which has 28."

As early as first grade, children learn to spell "arithmetic" by memorizing the following sentence: "A rat in Tom's house may eat Tom's ice cream." All of these examples are mnemonic devices—sayings or procedures that help people to remember an idea, list, or the like.

Suppose you wanted a technique to memorize the major glands in the body, as outlined in the biology chapter in the Appendix. There are several ways you might do this:

1. *Take the first letter of each of the components and make them spell a nonsense word.* The major glands are the hypothalamus, pituitary, thyroid, parathyroid, pancreas, adrenal cortex, adrenal medulla, ovaries, and testes. There are several combinations of letters that you might use:

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PHAT POT PA (Pronounced FAT POT PA)
 PAP's TOP HAT (Pronounced the way it looks)
 THAT POPPA (Pronounced the way it looks)

Using the first letter of each of the words and making them spell something can activate your retrieval system at test time. If you can make the sound of your nonsense word connect with the meaning of the targeted concept, so much the better.

2. *Use the terms to form a nonsense sentence.* Remember that the sentence need only make sense to you. For example, you could remember some of the glands by using the following sentence:

I had a strange dream that while standing in a *pit*, I took a *test*.
 When it was *over*, a *hypo* cannibal tied me up and *tied* me in a *pan*.

The word “pit” cues you to the pituitary gland, “test” to testes, “over” to ovaries, “hypo” to hypothalamus, “tied” to thyroid, and “pan” to pancreas.

Because mnemonic devices are especially useful for learning lists of information, they may be useful for subjects (such as biology) that require more memorization. Notice that the above sentence also forms a rather bizarre image in your mind. You can almost see yourself standing in that pit, taking the test, and then being tied up by the cannibal. Images, which are discussed in the following section, can also be valuable retrieval cues. The application exercise at the end of this section will give you practice in memorizing information from a biology test.

Two final mnemonic devices deserve mention; they are the peg-word method and the method of loci.

3. The *peg-word method* is particularly useful for learning new terms. It is a word-association technique that requires you first to learn the following rhyme:

One	is	a	bun.
Two	is	a	shoe.
Three	is	a	tree.
Four	is	a	door.
Five	is	a	hive.
Six	is	a	stick.
Seven	is		heaven.
Eight	is	a	gate.
Nine	is	a	line.
Ten	is	a	hen.

Once the peg-words have been learned, they can be used to retrieve information. For example, let's return to the glands once again. For “pituitary” you could image a bun (“One is a bun”) down in a pit; a hypodermic (for hypothalamus) needle sticking in a shoe (“Two is a shoe”); a pan (for pancreas) under a tree (“Three is a tree”); and so forth. It is

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possible to learn hundreds of peg-words; simply invent as many of them as you have items to memorize.

4. To use the *method of loci*, you imagine a familiar setting—perhaps your living room, dorm room, or the street where you live. Then you “walk” this familiar path in your mind. As you walk this path, you attach a word or concept to a particular familiar location. These paths can be as bizarre as necessary, because they are personal aids to help you remember.

For the glands, you might imagine the following as you “walk” through your living room:

I walk in the front door and immediately see a *pit* in the middle of my living room. I go *over* and try to peek in. I see a *para adrenal glands* cooking in a *pan*! This is a *test*, but I will remain *hypo*!

The method of loci relies heavily on the use of outrageous imagery. In fact, the more outrageous the image, the easier it is to remember the information.

As strange as some of these techniques may sound, they actually work, and they can be fun to create. Try them out on the Application Exercises, and see which methods you feel comfortable with.

Imagery

The usefulness of imagery as an aid to memory and retrieval has been known since the ancient Greeks. In fact, prominent early Greeks, such as Plato and Aristotle, felt that the mind was “a waxen tablet” of sorts in which all experiences, ideas, and concepts were stored and retrieved as images. Although controversy abounds as to whether information is stored solely as images, it is widely accepted that the use of imagery can be a valuable learning and retrieval tool. Both the method of loci and the peg-word techniques use imagery. College students who use imagery out-perform those who do not, particularly on tasks such as learning new terms.

Suppose you are preparing for a psychology test on phobias. As part of your test, you will be asked to define several phobias (a memory-level task). Below is a list of phobias that you have been asked to learn:

Acrophobia	fear of heights
Aerophobia	fear of flying
Agoraphobia	fear of open spaces
Amazophobia	fear of driving
Anthrophobia	fear of people
Aquaphobia	fear of water
Claustrophobia	fear of closed spaces
Dementophobia	fear of insanity
Mikrophobia	fear of germs
Phonophobia	fear of speaking aloud

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Although you could learn these words by traditional means (that is, by saying or writing them over and over), it would probably save you a considerable amount of time to devise imaging techniques as an aid to learning them. Let us describe some images that might help you to remember the first few words. Remember, you can formulate your own images; those given here are some that have worked for others.

Acrophobia—fear of heights. Think of an *acrobat* very high off the ground, perhaps swinging on a trapeze. It is his first time performing without a net.

Aerophobia fear of flying. Image an *airplane* in which you are flying. See yourself in the seat. Imagine what it would feel like to fly in a bad storm.

Agoraphobia—fear of open spaces. Think of the word *agriculture*. Agriculture takes place in large open spaces. You are lost among acres of corn plants and cannot find your way out.

Many students find it easy to learn lists of new terms if they use personalized images. The images formed need not make sense to anyone else but you. Incorporating imagery into other rehearsing and reviewing strategies can be an extremely powerful learning tool.

Application Exercise (Your Texts)

From one of your own courses, find information that would be appropriate to learn using mnemonics. Do the same with imagery.

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Distributed Practice

By now, you probably are quite aware of the fact that learning the maximum amount of information and doing well on exams require considerably more than passively reading and “looking over” the material. This is where many freshmen make a big mistake; studying for an hour the night before a high school test was probably enough to earn a decent grade, but to be academically successful in college, you must begin to prepare well in advance of any exam. Professors expect you to possess the needed study strategies and to extract from text and lectures information that will be asked on an exam. As a general rule, cramming does not work consistently in a college setting. You must learn not only which study strategies work best for you in specific courses but also how to budget your time so that you have adequate time to prepare for tests.

The approach we suggest in planning for tests is unique because it is task-specific. Many college study-skills texts recommend using a block schedule, in which you plan everything you do, from morning until night, for each day of the week. Although we discussed scheduling earlier in the text, because some students do find it useful, we have found that for most students, scheduling is a passive activity. Students may fill out a schedule, but they usually do not follow it, and they do not set specific study goals for particular study sessions. For a study plan to be beneficial, it must be task-specific; that is, you must know how many study sessions you need, plus what your goals will be for each session. A study plan also must have a built-in monitoring component that allows you to check your level of understanding. A good plan includes time to reflect on the task at hand, how you are preparing for the task, and what you will do if you are failing to understand the material.

The PLAE¹ model—*Preplan, List, Activate, Evaluate*—can help you to prepare for exams so that you feel confident in your ability to do well. If you use the PLAE procedure to prepare for each exam, you will be well on your way to becoming an independent learner who can regulate his or her own learning. Before discussing particulars of the model, let us first address the assumptions students generally have about studying and test preparation versus the assumptions inherent in PLAE:

1. *Students generally assume that reading and studying are synonymous terms.* Some students even say, “Gee, I’d better start studying. I have a test the day after tomorrow and I haven’t even read the chapters yet.” The PLAE model takes a different focus. PLAE assumes that all reading has been completed *before* actual studying begins. Therefore, reading

¹ M. L. Simpson and S. L. Nist, “PLAE: A Model for Planning Successful Independent Learning,” *Journal of Reading*, Vol. 28, pp. 218–23.

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chapters is not even addressed in any of PLAE's stages. You may need to refer to your text for clarification of information or to rehearse or review your annotations, but the reading should be finished before you begin studying using PLAE.

2. *Many students study by "looking at" important material.* Students who use this procedure as a means of test preparation usually do rather poorly. What do most students do when they "look at" material? They passively go through the text or their notes looking at, underlining, or reading. Generally, they learn little new information, because merely looking at material does not transfer it into long-term memory. In PLAE, studying involves active, self-testing processes in which students can define what they know and what requires additional study. With PLAE, studying is hard work and requires a student's involvement, but the return is a significant amount of learning.
3. *Most students prepare for every test in the same manner*—they study for a literature test using the same strategies as for a biology exam; they prepare for an essay test in the same way as for an objective test. Students who cling to this method of exam preparation often do poorly, even though they may study for many hours. PLAE, however, assumes that studying is task-specific. The model asks you to know what kind of test will be given (if you are not sure, ask your instructor), the grade you hope to receive, and specific strategies to use in certain disciplines.
4. *Many students assume that the total amount of study time equals success.* Students often assume that ten hours of test preparation the night before a test is equal to two hours of preparation on each of five nights. Many hours of study the night before an exam may work out for an occasional exam, but a steady diet of cramming will eventually be reflected in your grades. The key idea behind PLAE is *distributed practice*—spreading your test preparation over a number of days, with concentrated periods of time allotted for studying. Distributed practice helps you not only to perform better on the test but also to remember the information long after the test. For courses in which the final exam is cumulative, retaining course material over an entire term is certainly beneficial.
5. *Students rarely use the score they receive on a test as diagnostic information.* To most students, the grade is the only thing that matters. If they did well, the test paper is generally tucked away neatly in the back of their notebook; if they did poorly, the exam may wind up in the trash basket. PLAE suggests that students use their test papers as diagnostic information for future planning. Students must be aware of the items they missed. (Were they factual or inferential items? Were they taken from the text or the lecture notes?) By noting the type of items missed, students can modify future studying and improve poor grades.

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The PLAE Model

As stated earlier, there are four stages to the PLAE model—Preplan, List, Activate, and Evaluate.

Stage 1: Preplan

The first stage, preplanning, focuses on defining tasks or problems and setting goals by asking yourself a series of questions:

1. When is the test? (date, day, time)
2. Specifically, what are my other obligations that week?
3. What does the test cover?
4. How many items or questions will be on the test?
5. What kind of test will it be?
6. What type of questions will be asked? Factual or memory-level questions? Inferential? Applied?
7. How much does the test count in the total evaluation process?
8. What is my goal for a grade on this test?
9. How much time do I need to spend studying, rehearsing, and reviewing?
10. How will this study change my regular schedule? Explain how you will find this extra time.

With the exception of the last parts of the first question, you should be able to answer the first five questions by carefully reading your syllabus or course outline or by asking your professor. Most professors will answer such questions as long as you ask them in the proper manner. In fact, instructors usually view such questions positively. It is questions such as “What’s on the next test?” that professors disdain. Questions 6–8 require a commitment on your part. Honestly answering these questions should give you a good idea of what your task is and how much time you must allot to preparing for the exam.

Stage 2: List

The second stage of PLAE, listing, requires you to determine how to carry out the task or to solve your problem, and how to turn this strategic decision-making process into an ideal plan. Because mature learners realize that there is no single study approach that will work equally well on all types of material, they plan each task specifically, depending on the subject matter to be studied and the type of test to be taken. In Stage 2, identify the specifics of your study plan by answering some questions and engaging in several activities.

1. *List* the rehearsal strategies that you will utilize for this particular test. Then explain *why* you feel that the strategies you selected will be the most appropriate for this particular test.

Strategies

Why they are appropriate

- (a)
 - (b)
2. Complete a plan of study by answering the following questions:
 - (a) What strategy will you use?
 - (b) When and where will you study?
 - (c) How long do you plan to study?
 - (d) Did you reach your goal?
 3. Check your plan of study and ask yourself these questions:
 - (a) Have I distributed my study time over several days?
 - (b) Did I schedule blocks of time to review my annotations and preview the chapter again?
 - (c) Did I schedule at least two blocks of time to test myself on the key concepts? for a friend to test me?

Note in Figure 9.1 that, as part of Stage 2, you actually write down your plan of action. This is important because, in order to write your plan, you must first think about it. Thinking about your plan helps you arrange your studying time realistically. Remember that most students have good intentions; they want to do well on tests. However, because it is easy for time to slip away, putting your plan on paper will make you more aware of what you need to get accomplished.

<u>What Will I Do?</u>	<u>When? (day, time)</u>	<u>Where?</u>	<u>For How Long?</u>	<u>Reached Goal?</u>
Organize + review all annotations, rehearsal strategies, + lecture notes.	Oct. 11 1:00	library	2 hrs.	
Study Chapt. 1. Use annotations and related lecture notes.	Oct. 14 6:00	library	1 hr.	
Review chapt. 1. Study Chapt. 2. Use annotations, Q/A, and related lecture notes. Start 3x5 card of major concepts.	Oct. 15 1:00	library	1½ hrs.	
Review 1 + 2 by doing talk-through. Study chapt. 4. Use annotations, Q/A, + related lecture notes.	Oct. 17 7:00	room	1½ hrs.	
Review 1, 2, + 4 by doing talk-throughs. Study 5. Use annotations, charts, + related lecture notes. Finish 3x5 card.	Oct. 19 7:00	room	2 hrs.	
Prepare for essay questions. Review handouts.	Oct. 20 1:00	library	1½ hrs.	
Do talk-throughs with study partner. Check for precision in answers.	Oct. 21 7:00	room	2 hrs.	
Review everything doing talk-throughs using 3x5 card.	Oct. 22 6:00	library	1 hr.	
			Total Hours	<u>12 hrs.</u>

Figure 9.1

Example of a plan of study using PLAE (Step Two)

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Another consideration in making a study plan bears mentioning. If you examine Figure 9.1 once again, you will note that each study session has a specific goal to learn *X* information. Simply stating that you will use your concept cards to study the chapter is not specific enough. Rather, work to reach a narrower goal. If your goal is to learn all about the Kennedy presidency, stick with your studying until you feel comfortable that you truly understand the information.

A final aspect to note is the importance that review plays in the study plan. Notice that each study session begins with a review of the information learned in the last session. Take 10–15 minutes to talk through the key concepts. If you cannot remember part of the material, go back to your rehearsal strategies immediately and look up what you need to know. Only then should you progress to the new information. Unlike filling out a weekly schedule, the listing process should be active, flexible, and task-specific.

Stage 3: Activate

Once you have listed your plan of action, you are ready for the third stage—activating the plan. Monitor the plan by asking yourself another series of questions:

1. Am I following my list (plan)?
2. If not, why? What is interfering? Which obligations did I not account for?
3. How can I make modifications without sacrificing my original goals?
4. Am I understanding and remembering the concepts? Are my selected strategies working?
5. If not, why? Should I select another strategy or change my distribution of study time?

If the plan is not working, you may, at this point, have to return to Stage 1 or 2 and modify your original plan. Modifying a study plan is not too difficult if you begin preparing early; but if you wait until two days before the test to begin to prepare, modification will be impossible.

This is why monitoring is such a key element of the PLAE model. Keeping your finger on your level of understanding will help to avoid pushing the panic button two days before the test. Monitoring enables you to get assistance or to alter your studying tactics early in the test preparation game.

Stage 4: Evaluate

You carry out the fourth and final stage, evaluating, once your exam is returned to you. Careful monitoring during the earlier stages should prevent most problems, but you may have felt confident of your knowledge before the test, only to have your confidence shaken when your exam is returned to you. The evaluation stage is crucial to preparing for future exams. Rather

than looking at your grade or score as the end product, view it as a way to collect information that will help you study for subsequent exams. Ask yourself the following questions for each missed item:

1. Why did I miss the item? Was it because I did not know the answer to the question?
2. If I did not know the item, where did the concept come from? lecture? handout? films?
3. What type of question was it? factual? vocabulary? application?
4. Does there seem to be a pattern in my errors?
5. Did I select study strategies appropriate to the demands of the test? If not, which other strategies should I employ next time?

The information obtained from the evaluating stage of PLAE should then provide information for modification in preparation for the next exam. The PLAE procedure is cyclical, because it provides feedback for future planning.

As an example of how PLAE works, imagine that you are enrolled in an introductory history class. Your first exam is approaching, and because you are a dedicated student, you want to do well. You decide to use PLAE to prepare effectively. Look at the example worksheets (which you can use as a model) to see how you might carry out the first two PLAE stages—preplanning and listing. Then use the PLAE checklist at the end of the chapter to evaluate your plan.

PLAE Stages 1 and 2 Worksheet

Preplanning Stage

1. When is the test? (date, day, time)
Oct 23 (about 2 weeks away), 3rd period
2. Specifically, what are my other obligations that week?
I have a biology lab report due that same day.
3. What does the test cover?
4 chapters (1, 2, 4 + 5), all lecture notes, and 3 handouts.
4. How many items or questions will there be on the test?
50 items
5. What kind of test will it be?
Objective - multiple-choice and true/false plus 2 essay questions
6. What type of questions will be asked? Factual or memory-level questions? Higher-level?
About 40% memory + 60% higher-level.
7. How much does the test count in the total evaluation process?
About 20%
8. What is my goal for a grade on this test?
A or B+
9. How much time do I need to spend studying, rehearsing, and reviewing?
about 10 hours

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10. How will this study change my regular schedule? Explain how you will find this extra time. *I need to add 2 hours since I usually spend about 8 hours weekly.*

Listing Stage

1. *List* the rehearsal strategies that you will utilize for this particular test. Then explain *why* you feel that the strategies you selected will be the most appropriate for this particular test.

Strategies	Why They Are Appropriate
(a) <i>Question/answer (focus on higher-level)</i>	<i>Most of the test will be analysis & synthesis; I tend to be a good predictor</i>
(b) <i>Charting</i>	<i>To compare/contrast presidents.</i>

2. Complete the plan of study below.
3. Check your plan of study and ask yourself these questions:
- (a) Have I distributed my study time over several days? ✓
 - (b) Did I schedule blocks of time to review my annotations and review again the chapter? ✓
 - (c) Did I schedule at least two blocks of time to test myself on the key concepts? for a friend to test me? ✓

Stage Four—Evaluating

(Questions to ask myself once I see my exam's score)

1. Was the test what I expected?
Yes
2. Did I follow my plan for studying? If not, what events or situations interfered with my carrying out the plan?
For the most part. I didn't spend as much time on the talk - throughs as I should have.
3. How many hours did I study? Were those hours distributed or massed?
About 10. Distributed
4. What types of questions did I miss? Detail and example? Key ideas? Vocabulary? Applications?
- some
5. Did I miss any questions because I misread them? How many?
Only 1
6. Did I miss questions because I didn't know or recognize the information? If so, where did that information come from? Lectures? Textbooks? Handouts? Films? *I recognized the information; I just couldn't remember it!*

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7. Is there a pattern to my errors on the test? (Check the appropriate ones below.)

☒ I missed questions on my lecture notes. (4)

☒ I missed questions that should have been in my annotations of the textbook's key ideas and examples. (2)

☐ I missed questions about handouts or films or outside readings.

☐ I missed questions about key vocabulary.

☒ I missed questions that asked me to make applications to new situations. (2)

☐ I missed questions because I failed to read the item carefully or overlooked key words like *except*.

8. Did I select the most appropriate study strategies for this test? If not, which ones would be more appropriate next time?

Yes but I'll need to spend more time on lecture information and be more precise

9. For the next test on Nov 12, I will do these things to change my pattern of study:

<i>Lecture notes</i>	<i>More time for essay</i>
<i>Talk-throughs</i>	<i>preparation</i>
<i>Time-lines</i>	

I will continue doing these things which helped me:

Charts

Studying annotations

Taking good lecture notes.

To put this plan into operation, it is important to check off each task as you accomplish it and to monitor how your studying is progressing. For example, if you feel weak on the essay portion of the test, you might want to budget an additional hour in practice or to check with your professor to see if your predictions of essay questions are accurate. If you carry out your designated plan, you should feel confident about how you will do.

Suppose that a week later you get your test back and receive a *B*; a *B* is a good grade for your first exam. When evaluating your test, you find that you misread one question and missed four lecture note questions, two dealing with examples and two dealing with applications. Your essay lacked enough specifics for full credit. (You knew that the essay would be your weakest area!) From the evaluation, you decide that you spent enough time studying but that you needed to concentrate on predicting higher-level questions and on planning and writing essay questions to include more details. You decide

9 The Day After: Reviewing

to modify your plan slightly as you prepare for the next exam, which is three weeks away.

Just as the PROR method requires practice and application to be effective, the PLAE method of test preparation must be applied in a variety of settings. Simply memorizing the steps will do little to enhance your performance. You must practice in order to use the model efficiently and effectively. Remember the key to success is distributing your study time over a period of days and monitoring your understanding. By using PLAE and beginning your preparation well in advance of the test, you should be quite successful.

Conducting Talk-Throughs

On several occasions in this text we have mentioned the importance of doing talk-throughs as a means of monitoring your level of understanding and as a way to determine whether you are ready for an exam. Talk-throughs, when carried out properly, can be your biggest asset in determining what you know. To do talk-throughs, use the following guidelines:

1. Read and annotate the text information as it is assigned by your instructor.
2. Use your annotations to make rehearsal strategies such as maps, concept cards, or charts. Make sure that you use the proper self-testing format when you make your strategies.
3. Cover up the key information on your rehearsal strategies, leaving only the cues or major points revealed. Say aloud what you know (without looking) about the major points to yourself, or better yet, to your study partner.
4. Uncover the supporting information to see how much you remembered and how precise you were. If you are working with a partner, she or he should check to see how much you knew. Say aloud the information you did not know or that you omitted at least three times. Then try to talk through the point again. Repeat this process until there is precision in your knowledge and you feel very comfortable with the amount of information you know.

Notice that when you do talk-throughs, your cues or key concepts become crucial because those small pieces of information should spark your memory for additional supporting details, facts and examples. Many students make the mistake of only talking through the “big picture.” For example, knowing that Kennedy and Johnson were both strong advocates of civil rights will not be much help in passing your history test. You also need to know why each played a key role, what legislation they presented to Congress, and, more specifically, how they supported civil rights.

As your test gets closer and closer, the amount of notes you need to study from should steadily decrease, so that one or two days prior to the test, all you should need to study from are one or two 3×5 cards. Only the key concepts, along with some appropriate mnemonics, should be listed on the cards. Figure 9.2 indicates what your cards for the test on the “Stormy Sixties” chapter might look like. Use this card to practice your talk-throughs. If you can use just the concepts on the card as cues and be very precise in talking through the information, you are probably ready for the test.

Key Ideas

1. Reviewing is based on three learning principles:
 - (a) further consolidation of information
 - (b) distributing your study over time increases learning efficiency
 - (c) monitoring your learning
2. Daily reviewing increases learning efficiency.
3. Mnemonic devices, peg-words, the method of loci, and imagery are personalized reviewing aids.
4. The PLAE model of planning—Preplan, List, Activate, and Evaluate—should be used as a task-specific method for distributing your study time.
5. Doing talk-throughs using 3×5 cards with the major concepts listed is a good way to review for tests.

Application Exercises (DTT)

1. Make photocopies of the PLAE forms on pages 160–164. Use one of them to make a study plan for the “Stormy Sixties” chapter from the Appendix; save the other copies for use later. Use the PLAE model in this chapter as a guide. Remember to use the appropriate rehearsal strategies, and be prepared to tell why you selected those strategies.
2. As you study the other chapters from the Appendix, make a study plan using the PLAE model as a guide.

Application Exercises (Your Courses)

For your next major test, make a study plan using the PLAE model. When your test is returned to you, evaluate how you did. Make adjustments in your studying as needed.

New Frontier
JFK's early problems (3)
Khrushchev + JFK
Trade Expansion Act
American foreign policy
(1960)
Vietnam (U.S. involvement)
Bay of Pigs
Cuban Missile Crisis
Civil Rights movement
under Kennedy
LBJ
1964 Presidential election
Goldwater
Tanker Gulf episode
Great Society
Civil Rights Act (1964)
Civil Rights movement
(1964-1966)

M.L. King, Jr.
Vietnam (under LBJ
administration)
Pueblo incident
Domestic discontent
over Vietnam
U.S. relations with
Europe
Tet Offensive
LBJ's demise
1968 Presidential
election
Nixon

Figure 9.2

Sample 3 × 5 Cards for "Stormy Sixties" chapter

Preplanning Stage

1. When is the test? (date, day, time)
2. Specifically, what are my other obligations that week?
3. What does the test cover?
4. How many items or questions will be on the test?
5. What kind of test will it be?
6. What type of questions will be asked? Factual or memory-level questions? Inferential? Applied?
7. How much does the test count in the total evaluation process?
8. What is my goal for a grade on this test?
9. How much time do I need to spend studying, rehearsing, and reviewing?
10. How will this study change my regular schedule? Explain how you will find this extra time.

Listing Stage

1. *List* the rehearsal strategies that you will utilize for this particular test. Then explain *why* you feel that the strategies you selected will be the most appropriate for this particular test.

Strategies

Why they are appropriate

- (a)
 - (b)
2. Complete the plan of study that follows.
3. Check your plan of study and ask yourself these questions:
- (a) Have I distributed my study time over several days?
 - (b) Did I schedule blocks of time to review my annotations and preview the chapter again?
 - (c) Did I schedule at least two blocks of time to test myself on the key concepts? for a friend to test me?

What Will I Do?

When? (day, time) Where?

For How Long?

Why?

Total Hours _____

9 *The Day After: Reviewing*

Stage Four—Evaluating

(Questions to ask myself once I see my exam's score)

1. Was the test what I expected?
2. Did I follow my plan for studying? If not, what events or situations interfered with my carrying out the plan?
3. How many hours did I study? Were those hours distributed or massed?
4. What types of questions did I miss? Detail and example? Key ideas? Vocabulary? Applications?
5. Did I miss any questions because I misread them? How many?
6. Did I miss questions because I didn't know or recognize the information? If so, where did that information come from? Lectures? Textbooks? Handouts? Films?
7. Is there a pattern to my errors on the test? (Check the appropriate ones below.)
 - ☐ I missed questions on my lecture notes.
 - ☐ I missed questions that should have been in my annotations of the textbook's key ideas and examples.
 - ☐ I missed questions about handouts or films or outside readings.
 - ☐ I missed questions about key vocabulary.
 - ☐ I missed questions that asked me to make applications to new situations.
 - ☐ I missed questions because I failed to read the item carefully or overlooked key words like *except*.
8. Did I select the most appropriate study strategies for this test? If not, which ones would be more appropriate next time?

9. For the next test on _____, I will do these things to change my pattern of study:

I will continue doing these things which helped me:

PART

III

Expanding College Reading and Studying Strategies

Part II emphasized the importance of interacting with the text. This interaction occurs not only *while* you are reading, but also *before* you read, by activating prior knowledge, previewing, and asking questions, and *after* you read, by organizing and reviewing. This constant involvement promotes learning, understanding, and subsequent high test scores. We have stressed that learning is hard work, but the benefits received, in terms of good grades and being a knowledgeable person, are well worth your efforts.

Parts I and II have discussed how to get the most out of your text. Part III goes beyond the textbook and presents efficient and effective ways to take lecture notes and prepare for examinations. Chapter 12 will also show you some techniques for understanding and remembering new terms and concepts.

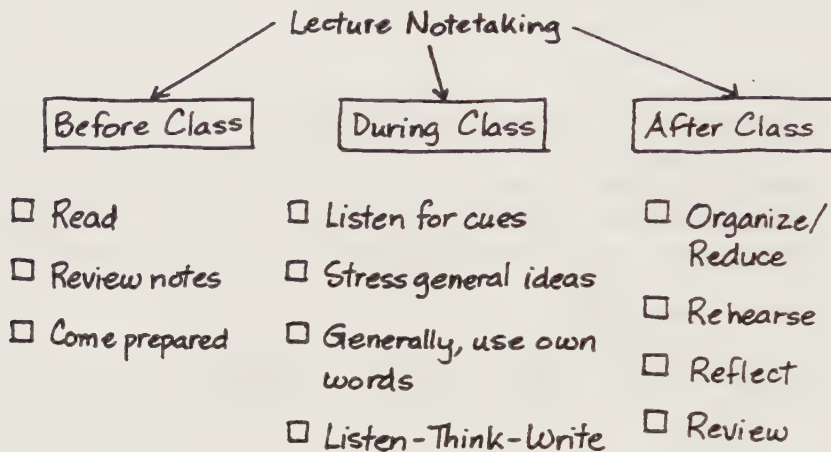
It is important, however, to keep in mind what you have learned about learning from texts as you proceed through Part III because many of the same principles apply. For example, taking lecture notes in and of itself is not enough, just as merely reading your textbook is inadequate. There are tasks you must do before the lecture, during the lecture, and after the lecture if you are going to remember the information effectively. Merely being a warm body in class is insufficient. The same holds true for preparing for exams. Cramming the night before a big test will inhibit your chances of making the higher grade. Rather, doing well on college exams involves synthesizing all of the strategies you have learned and using the ones that are most appropriate at the correct times.

Part III reiterates that getting the most out of your college classes requires daily attention to every subject. Although you probably will not spend equal time on every subject, each class requires some time each day for rehearsal and review of text material and lecture notes; to do these things faithfully requires discipline, commitment, and motivation.

CHAPTER

10

Taking Notes From Lectures



Just as the PROR method of studying text suggests that what you do before and after reading are as important as the reading itself, the Cornell method¹ of taking lecture notes, which we have modified somewhat, follows a similar pattern.

In college, most professors require you to read the text in order to gain certain information about a topic. Although class lectures may touch on information given in the text, most professors use the lecture to supply additional information and to explain further topics introduced in the text. Therefore, if all you do is read the text and show up for class occasionally, you will find yourself in a very compromising situation when exam time comes. The note-taking method outlined in this chapter will give a valuable tool for reviewing and studying.

¹ W. Pauk, *How to Study in College* (Boston: Houghton Mifflin Company, 1984).

In this chapter, we will discuss strategies to use before, during, and after a lecture to help you understand, annotate, and remember the information better. How you use these strategies will be determined partly by the type of lecture you are attending.

- *Large lecture (50–500 people):* With large classes, the professor cannot spend time interacting with individual students, answering questions, or gearing the lecture to a particular interest. Instead, professors with large lecture classes tend to begin exactly on time, follow a prepared outline, move quickly through material, have little student input or questioning, and end exactly on time. They often use overhead transparencies or the blackboard to make important points. If you are in a large lecture, the strategies in this chapter will help you prepare for the lecture so you can most effectively take notes on rapidly-presented information. Be sure to pay attention to the ideas that will help you sustain interest and attention, since it is very easy to lose concentration in a large lecture.
- *Small lecture (10–50 people):* Small lectures tend to be more informal. The professor can pay more attention to individual student interests, backgrounds, and understanding. The speed of the lecture may be geared more to the abilities of the particular group of students in the class. There is usually more opportunity for questions, discussions, and demonstrations, and hence it is often easier to sustain your concentration and interest. At the same time, it is harder for you to miss class or to be inattentive or unprepared without being noticed. For these small lectures, then, it is especially important that you *prepare* through reading and reviewing, that you *participate*, and that you *maintain your interest and attention*.
- *Discussion group (as an adjunct to the lecture):* Lecture classes—especially large lecture classes—often have discussion groups that go with them. For example, the lecture might be held once a week for two hours and a discussion group held once a week for one hour. Discussion groups are usually taught by teaching assistants (T. A. s), but they are almost always planned or coordinated by the professor who delivers the lectures.

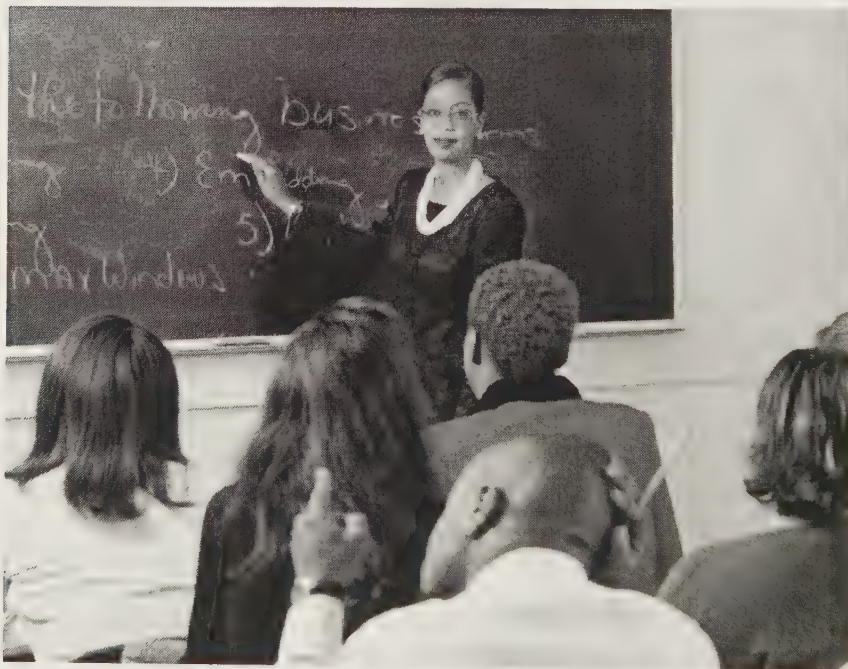
Some students think that discussion groups are not really an important part of the course and are conducted only to help students who have trouble understanding the lecture. While this may be true in some cases, for the most part the discussion groups are very important for all students in the lecture class. Discussion classes usually include other information, examples, and demonstrations that will help you understand the course better—and that will likely be on a test. Since the professor often provides the T.A.s with a list of discussion questions and topics, these classes give you an opportunity to practice answering the kinds of questions your professor is likely to include on a test. Discussion classes also give you an opportunity to ask questions and to

clarify information. Attendance at, and participation in, the discussion sessions is often as important a part of the course as the lecture or textbook. As with small lectures, it is important that you *prepare* for discussion classes through reading and reviewing, that you *participate*, and that you *remain alert for new information*.

Before the Lecture Begins

Read the Text

Reading your text gives you the general information that your professor expects you to have. If you read the text before the lecture, you can ask any questions about topics in the text that you did not understand fully. Remember, your text annotations can flag information that you do not understand. If you wait until after the lecture to read the chapter, you may not realize that you do not understand something until it is too late. You may get further and further behind and eventually become so lost that it becomes impossible to find your way again. This possibility is especially likely with highly technical material that is taught sequentially, because in order to grasp Chapter 2, you must first understand Chapter 1, and so on.



This professor writes key points on the board, making it easier for students to take lecture notes. (Richard Wood/The Picture Cube)

III Expanding College Reading and Studying Strategies

Review the Previous Day's Notes

If possible, immediately before class, read over your notes for five or ten minutes. This reading refreshes your memory and gets your mind oriented toward the lecture to come. Note anything that you do not understand, because many professors will address questions from the previous day's lecture right at the beginning of class. Reading the text before the lecture tells you what is coming; reviewing your lecture notes refreshes your memory of what has already been covered.

Arrive at Class on Time, and Get a Good Seat

Coming to class late not only interrupts the lecture for others but also puts you at a disadvantage. Once you are seated, it will take you another several minutes to get ready to take notes. By this time, you may have missed important information, or you may be unable to make sense of what the professor is saying. When you arrive at class early, you can select a seat close to the front. Sitting in front is to your advantage for two reasons:

1. Sitting in front keeps your attention focused on the lecture. You can see the chalkboard and clearly hear what the professor is saying.
2. Students who sit in the front tend to ask more questions, and the instructor gets to know them better. Students who may be on the border between getting an *A* and a *B* or a *B* and a *C* may receive the higher grade if they have shown interest and enthusiasm.

Be Prepared

Use a loose-leaf notebook rather than one that is spiral-bound. Loose-leaf notebooks make it easier for you to add additional information and class handouts. Also, at study time, you can spread out your notes, which can help you to gain a coherent picture of a whole section, chapter, or course.

Divide your paper so that you have about a two-inch margin on the left, as shown in the example in Figure 10.1. You will use this wide margin after the lecture to record major ideas or questions.

Date your notes, and number the pages. These notations are easy to refer to at a later date.

Listening to Lectures

There are many clues of which to be aware when listening to class lectures. While you are getting accustomed to your professor's style of lecturing, pay attention to these clues. Even though each professor has his or her own

style of lecturing, you can use the following clues as indications that information is important.

4/20/90

60's (cont)

3 major problems
Kennedy had at
beginning of term

Kennedy (JFK) had numerous problems
when he took office

1. Southern
Demo. didn't
like many
domestic
policies

- ① New policies were not liked by
So. Demos
(ex) So. Demos voted against
bills on more \$ for education
and medical assist. for old
Much of JFK legislation remained
stalled in committee

2. Inflation

- ② Economy
 - tried to keep inflation under
control
 - (ex) neg. noninflationary wage
agreement in 1962 w/ steel
industry — they raised
prices — JFK got angry +
they backed down
 - supported tax cut bill as a
way of stimulating economy
∴ \$ put in hands of people

3. \$ for space
program

- ③ Space program
 - used to stimulate economy
+ for military purposes
 - many skeptical — thought
space program was a
waste of \$

Figure 10.1

Sample Lecture Notes

Obvious Clues

If professors say, "This is important information to remember," or "Pay particular attention to . . ." or "Make sure you understand the handouts," believe them. You are very likely to see the material again on the exam. Other obvious clues are information professors write on the chalkboard or otherwise emphasize—for example using slides or an overhead projector. Do not ignore these clues; use them to guide your test preparation. (See Chapter 11.)

Spelling and Definition

If a new term is written on the chalkboard and defined, make sure that both the spelling and definition are put in your notes correctly. For example, the words *ectoplasm* and *endoplasm* do not differ much in spelling, but their meanings differ drastically. Get it down correctly during the lecture. If you are unsure of something, ask your instructor to clarify it; other students may be unsure of it as well.

Repetition and Extended Comment

When concepts are repeated several times or receive a considerable amount of attention during the lecture or class discussion, include them in your notes. A well-written exam should reflect the amount of class time spent on a particular idea.

Listing

Any time that a list of items is given, include it in your notes. For example, if the professor says, "The three major causes of the Revolutionary War were" or "There were several reasons why" write this information down. Although you may not see the information in the *exact* form on the exam, it is still important that you know it. "The three major causes of the Revolutionary War" may become an essay question such as the following:

Three major causes of the Revolutionary War were discussed in lecture. Which of these causes made the most significant contribution to the war's beginning? Discuss in terms of the politics, persons, ideologies, and places involved.

Of course in order to answer this question you must first know what the causes were!

Superlatives

Phrases like "*most* important," "*greatest* contribution," "*fewest* students," and "*best* example" all contain superlatives. Listen for these terms, and include them in your notes.

Volume Change and Speech Rate Change

Individuals tend to talk more loudly and slowly when information is important. In fact, instructors often pause after they have made a key point in order to give you time to write. Use these clues as aids to what you should include in your notes and what you should omit.

During the Lecture

The format for taking notes presented here may differ somewhat from what you are used to, but if you practice it you will find that it is a very effective method. Most note-taking systems emphasize an outline form; this method does not.

Take notes only on the right-hand side of pages. (See Figure 10.1) Do not cramp your notes; skip a line or two to show where one idea ends and another begins. Take your notes in simple paragraph form rather than in outline form. Often students who try to take notes in outline form concentrate more on the format than on the content. Do not worry too much about form. It is content that is important.

Stress General Ideas

Write down only enough details and examples so that you will be able to understand the information later. Be selective; you cannot write down everything. Some students make the mistake of trying to write down everything the professor says. Because this is impossible, focus your attention on general ideas and fill in the necessary details later.

Phrase Most Things in Your Own Words

Notice that we said *most* things. Definitions of new terms should always be in the lecturer's exact words, because an *and* or an *or* can change the whole meaning. Math, chemistry, physics, or statistics formulas must be exact in order for the problems to work out. Nevertheless, most lecture information should be put into your own words. Doing so shows that you understand the material and will make it easier for you to study from your notes.

Listen First, Think Second, Write Last

Some students make the mistake of listening and then writing, leaving out the thinking step. If you listen to what is said, then think about what is important, you probably will be much more selective in your note-taking. Students who listen and then write without first thinking about what has been said tend to have a difficult time deciphering their notes at study time.

Remain Alert and Ask Questions

If you are unsure of a concept the professor presents, ask for clarification or explanation. If possible, try to clear up the misunderstanding immediately. However, if you are in a large lecture class, this approach may not be possi-

ble; but most large lecture courses break down into smaller groups several times weekly at which students can discuss problems. If you have to wait to ask your question, make sure that you mark it in your notes so that you do not forget to bring it up at the appropriate time.



When listening to lectures, listen and think before you write down the important points in your own words. (Ulrike Welsch)

10 Taking Notes From Lectures

After the Lecture

Once you have left the lecture, you still have work to do. If you do not take time to go over your notes daily, you are going to have a difficult time when exam day arrives. Lecture notes should be included in your daily review, just as text material is (see Chapter 9); therefore, you should review your notes as soon as possible after the lecture. When we discussed scheduling your time (in Chapter 3), we suggested blocking out time before a lecture to review the reading and the previous lecture's notes, and blocking out time after each lecture to *organize and review*.



Comparing notes after class with other students lets you know whether you agree on which are the most important points. (Courtesy of Sangamon State University, Springfield, Illinois.)

III *Expanding College Reading and Studying Strategies*

Organize/Reduce

Before going to the lecture you divided your notebook page, leaving a two-inch margin on the left-hand side; now is the time to use it. As soon after the lecture as possible, annotate the major ideas (a few key words will suffice) in this margin. The process is very similar to the text annotation discussed in Chapter 7 (see Figure 10.1). Some students prefer test-prediction questions about the key ideas in the margin. Some like a combination of both types of annotations. By using either or both procedures, you should be able to locate information easily. When you are reviewing, you can cover up the right-hand side of the page, where you wrote your notes, leaving only the key words, phrases, or questions exposed. Then you can go through and see how much you can remember about each major idea in your notes. Now is also the time to go through and reduce the material in your notes, if possible. Use a highlighter (now is the time to use it!) to mark important information, material that you feel you must know. When you study, ignore anything that you have not highlighted.

Rehearse

Now that your material is reduced, you need to spend some time, soon after the lecture, in rehearsal. Go over the information, rehearse it, and discuss it with classmates. Some students prefer to copy their notes over again, this time including only the most important information. This process helps to get the material into long-term memory as well as to further reduce the amount to be learned; but, as we mentioned before, it is time-consuming. Experiment to see which is the most efficient and effective method for you.

Reflect

Think about what you have written. Do you actually understand everything? If not, seek out sources (either individuals or printed material) that can clarify any misunderstandings. If you do not reflect upon your notes, the chances are that you will probably memorize a lot of factual information that will not help you very much on a test. Ask yourself memory, interpretation, and application questions about the material. This procedure will force you to think about how everything fits together—the text, the lecture notes, plus any additional reading.

Review

Just as with text material, you must review your lecture notes each day. If you do a good job in taking and reducing your notes, you will probably only have to spend 15–20 minutes each evening. Review your lecture notes, using the rehearsal strategies you have chosen, along with your annotations

from the related text material. See how much overlap there is between text and lectures. Keep the overlap in mind as you further reduce and consolidate information to study for a test. If you do review daily, the night before an exam should be spent in making sure that the material is fixed in your mind. You will not have to cram if you have done a little bit each evening.

Taking good lecture notes is a real skill for college students, and practice using the method presented here will enable you to have a set of notes that are easy to learn from. Keep in mind that good notes should stand the test of time. A month or even a year later you should be able to read through the notes and they should make sense to you. If they do not, think about the ideas presented in this chapter. These tips will help you become skillful in the art of note-taking.

Figure 10.1 presents a sample of what your notes should look like. Notice that the major headings are in the left-hand margin, and the actual class notes are on the right. Abbreviations were used (you can probably think of others) and, although the writing is quite legible, punctuation was omitted.

Key Ideas

1. Taking good lecture notes is a three-step process, encompassing what you do *before*, *during*, and *after* the lecture.
2. Be prepared when you go to class. Read the text before the lecture. Make sure that your paper is ready.
3. During the lecture, *listen* attentively for key points. *Think* about what the lecturer said. *Write* in simple paragraph form, leaving the left-hand margin blank.
4. After the lecture, use the left-hand margin to annotate key ideas or to predict test questions. Review your notes as soon as possible.

Application Exercises (DTT or Your Courses)

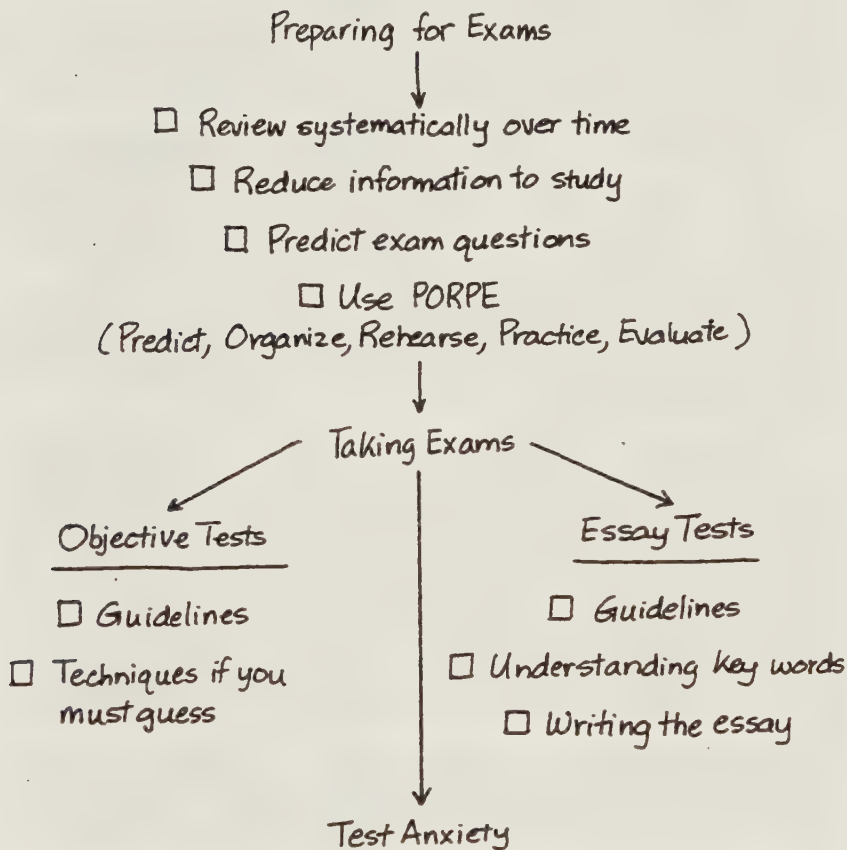
1. If you are taking a core class at the same time as you are using this text, practice taking notes using the method we described. Ask your instructor and peers to evaluate the format and content of your notes.
2. If you are not taking a core course, try to arrange to visit one. A psychology or sociology class would be best. Practice taking notes using this method. You may not be able to follow all of the procedures (such as reading the text before the lecture), but attending sample lectures will give you practice in listening for key ideas and putting your notes into the correct format.
3. Practice taking notes on documentary television shows. The television program "60 Minutes" provides an excellent opportunity for you to practice your note-taking skills.

III Expanding College Reading and Studying Strategies

CHAPTER

11

How to Prepare for Examinations



General Preparation Guidelines

It is a fact of life that the majority of college students are concerned about grades. Everyone wants to do well, and to most students being successful means making good grades. In addition to the grade earned, however, students should also consider how much they learned in a course. Those who get a *C* in a difficult course in which they learned a lot are probably more successful than those who get an *A* in “Basketweaving 001.” Nevertheless, could the students who received the *C* in the harder course have made better grades if they had studied harder? more? differently? The answer is probably yes.

This section gives you suggestions for preparing for classroom tests. General preparation guidelines are discussed, specific ideas are given for taking both objective and essay exams, and suggestions for reducing test anxiety are presented. As you read this chapter, keep in mind the reading and studying strategies you have applied throughout this text. At one time or another, they all come to bear in preparing for examinations.

Some “laws of the land” need repeating here. At the beginning of each term, develop a daily schedule that allows time for class preparation, study, review, recreation, eating, and sleeping. Your ability to adhere to the plan will be a measure of your success (see Chapter 3).

A study area conducive to learning is important. Make sure that it has good light and that all the tools you will need are at hand. Before the term starts, have the texts, study guides, outlines, dictionaries and reference books, paper, pads, notebooks, and pens that you will need in your study area, so that you can concentrate without interruption.

Rehearsing and reviewing are distinct activities, but they are equally important; be sure to allocate time for both in your daily schedule. Rehearsing is learning new material. Reviewing is critical because it strengthens the retention of this new knowledge.

Forgetting takes place most rapidly immediately after learning. Review and recall are therefore more effective soon after study. Following each class, go over the main points for 10–15 minutes to reinforce them in your memory. This procedure makes reviewing for exams a much quicker, simpler task.

Do not tax your memory or stamina. Research shows that most people can absorb and retain just so much knowledge at one time. With practice you can determine your own capacity and attention. It is important to learn day by day, week by week. But each period of study scheduled into your plan should be followed by recreation, a meal, or other activity (see Chapters 3 and 9).

Take legible class and study notes. Annotate in the margins, and underline your textbook throughout the term, and you will be able to review for weekly quizzes or final exams with a minimum of strain (see Chapters 7 and 9).

III *Expanding College Reading and Studying Strategies*

Tips for Reviewing for an Exam

If you have applied yourself during the term, preparing for exams becomes largely a question of reviewing what you have done before. The time needed is not as extensive as you might think, provided that you have been working consistently. Review for weekly quizzes should take no more than 15 minutes, a mid-term hour exam 2–3 hours, and a final examination 5–8 hours.

The PLAE model (in Chapter 9) gave you an overall framework to plan your time and study strategies for a test. Remember that one key to effective studying is distributing your study time. PLAE provides one way to distribute your review for a test over several days or weeks. The following tips will also help you prepare effectively:

1. *Carefully schedule your preparation for a final exam* into the two weeks before exam day. Using PLAE, organize a plan that interferes as little as possible with your regular study for ongoing classes. Keep in mind, however, that the last two weeks of the term tend to be very draining. Professors are often rushing to complete everything on the syllabus, long-term projects tend to be due, and the final exams for all of your courses all occur in the same week. Therefore, be prepared to feel some pressure near the end of the term, but make sure that you allow time for rest and relaxation, with no longer than 1–1½ hours of review at one time. Your mind needs to take breaks.
2. *Plan your review systematically and consistently.* Use your chapter annotating, your rehearsal strategies, and your lecture notes, recalling important ideas in each. Separate the information you know from that which you do not know. If certain points are difficult for you to remember, reread those specific points in the textbook, and then concentrate on the rehearsal strategy for that information. Otherwise stick with your notes, and do as little rereading as possible. Do not plan to learn something for the first time.
3. *Make summary notes to reduce information.* We suggest using note-cards for summarizing, because they are easily transportable. Briefly summarize the main points of class notes and text annotations. Group your summaries or key terms under broad headings in order to see relationships among concepts. This procedure will also help reinforce the major ideas and important details. These summary notes can also serve as a self-test toward the end of your preparation for exams. See if you remember the main points under each of the broad headings. As you go, ask yourself what, when, and so forth.
4. *Try to predict exam questions.* Be alert throughout the term to the emphasis instructors put on certain topics, aspects, or ideas. They often give clues to points that are important or particularly need review.



If you are unsure about the type or format of a test that will be given, check with the instructor. This makes a big difference in how you prepare. (Courtesy of Boston College/Gary W. Gilbert photographer.)

Also, consider what types of questions you might be asked. In high school, many of your tests may have asked memory-level questions and thus required you only to read and to memorize facts. However, college professors often include a variety of higher-level questions on exams. In Chapter 6, we discussed these types of questions and how they test both your memory for information and your understanding of how that information applies and relates to new situations. As you predict exam questions, try to use higher-level questions.

Pay attention to the form of testing the professor uses. Objective tests (multiple-choice, true-false, or matching) usually, but not always,

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test your knowledge of factual information. Essay questions, as we mentioned, tend to be higher-level questions and thus require more in-depth understanding of the topic.

5. *Ask your professors what they recommend for preexamination work.* Use their comments as a guide, but do not try to outguess them.
6. *Group reviewing can be helpful, but it should not take the place of working on your own.* (See Chapter 4.) Limit discussions of significant points and possible test questions to 30–45 minutes, with no more than four or five people participating in the group.
7. *Avoid cramming.* If you have followed a regular schedule of study and review, you should not have to cram. Remember, forgetting takes place most rapidly immediately after learning. If you do have to cram, be selective. Do not attempt an exhaustive review.

Follow these general guidelines when you are preparing for either objective or essay exams, but remember that studying for an objective test differs from studying for an essay test. Objective tests often (not always) concentrate on factual information, whereas essay exams require that students give a fair amount of detail and/or support about specific topics. The two following sections present some suggestions to help you prepare for and take objective and essay exams, respectively.

Objective Tests

What Is an Objective Test?

When professors tell you that you will have an objective test, what do they mean? An objective test can include any or all of the following types of questions:

- multiple-choice
- matching
- fill in the blanks
- true-and-false

Chapter 5 discussed the fact that professors in certain disciplines are more apt to give objective tests. Tests in biological science, introductory psychology, and physical science usually lean toward multiple-choice formats. However, some may require a combination of essay and objective items. Therefore, it is important to ask your instructor what you can expect.

Pointers for Taking Objective Tests

Many students are their own worst enemies in test-taking situations. The guidelines that follow may help you to determine the answer the professor is looking for. Keep this question in mind as you work through the items:

“What answer does Professor X want?” The following guidelines should help you to determine the “correct” answer:

- *Anticipate the answer* rather than looking for it. Prediction works for formulating answers as well as for formulating questions. Many students read the stem of the item and then search the answer choices for the one that might be right. Often, this approach is confusing. Instead, cover up the answer choices and see if you can predict the responses. Then look to see if your response is there.
- *Consider all of the alternatives.* Even though you are predicting, you still need to read all of the choices. Your exact prediction will probably not be listed; therefore, read each response carefully, and then make your choice.
- *Use logical reasoning.* Some answer choices just are not plausible; eliminate these first. By eliminating one or two responses, you may be able to “reason” the correct answer by thinking to yourself, “If *a* is correct, then. . .” or “If *c* is correct, then. . .” Again, keep in mind the answer your instructor wants.
- *Use information from other questions and options.* Look at the whole test. Often, information given in, say, Question 4 on the multiple-choice part can help you to answer Question 18 in the true-and-false section. Do not view each item in isolation.
- *Look for specific determiners.* Exact terms such as *all*, *always*, *must*, *never*, and indefinite terms such as *hardly ever*, *seldom*, *sometimes*, *frequently*, and *usually* can be dead giveaways. For example, few things in this world *always* occur. Thus, if you had a true-and-false question that read:

Chemical imbalances are always the cause of paranoid schizophrenia.

the word *always* should be a strong clue that this item is false. Even if you did not know the causes of schizophrenia, you could *guess* that there is no single proven cause. See how the meaning of this question changes by the replacement of *always* with *frequently*:

Chemical imbalances are frequently the causes of paranoid schizophrenia.

Now the statement would be true.

- *Balance points against each other.* Do this especially for multiple-choice items in which you are asked to give the “major reason” or the “best example.” All of the choices may be reasons why an event occurred or examples of the applications of a particular theory, but which one is the *major* reason or the *best* example? Weigh the options; then make your choice. As we previously suggested, predict your answer, consider the alternatives, and then choose.

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- If there is *no penalty for guessing, then guess*, if you are not sure. On multiple-choice exams, you have a one-in-four or one-in-five chance of being correct. On true-and-false items, you have a one-in-two chance of being correct. With matching, the odds decrease considerably, but you should still put down *some* answer. It is very foolish to leave objective questions blank, so weigh the alternatives and make your best guess. The next section will discuss how to make an educated guess.
- If all the choices seem equally likely to be correct, *go with your first hunch*. Unless you pick up additional information to make you change your mind, stick with your first choice. Many students get upset with themselves when their exams are returned and they discover that they initially had correct responses for several items but at the last minute changed them to wrong answers!
- *Answer the questions that you know first*. This procedure serves two purposes. First, it gives you confidence (this is why tests such as the SAT and the ACT put easier items at the beginning). Second, by answering those you know first, you can gain information that may help you on questions about which you are unsure.

The bottom line is to attempt to choose the responses that the test-maker intended. To do this, you must think and reason effectively, and predict accurately. Remembering the nine pointers mentioned above will help you.

Techniques to Help If You Must Guess

If you apply the strategies outlined in this text, you should enter most testing situations feeling confident and secure in your knowledge. You have surveyed your text, predicted questions, annotated and underlined important information, and used the appropriate rehearsal strategies. Using the PLAE model, you have developed a study plan that includes blocks of time for study and review. However, there may be rare occasions on which you did not adequately prepare for an exam and therefore must guess at answers to objective questions. The tips that follow should *only* be used when you are in a bind and must guess. As you read through these tips, keep in mind that most of them will only help you on tests that are generously constructed. Because most college professors have been trained in test construction, these hints may not be extremely useful in many situations. But take them as a last-ditch effort to make the best guess you can. Remember, on objective (especially multiple-choice and true-false) tests, never leave items blank unless there is a penalty for guessing.

1. When you are forced to rely on sheer guesswork, *one of the answer positions (a, b, c, or d) is usually a better guess than others*. Most writers of multiple-choice tests tend to favor one or two positions over others. Out of 100 questions, *a* might be the correct answer for thirty-two items, *b* for twenty, *c* for twenty-seven, and *d* for twenty-one items. If

you are forced to guess on such a test, you are better off guessing *a* or *c*. The difference is not very great in these cases, but on some exams as many as half the correct answers are in the same position. Keep in mind, however, that on a well constructed test, each answer choice should be used equally. Therefore, on a 100-item test, *a*, *b*, *c*, and *d* should each be used about twenty-five times. Use this information to your advantage in guessing situations to determine whether your test is well or poorly constructed.

2. *Avoid answers that repeat important words in the question.* Many test writers routinely include wrong answers that repeat terms in the question just to distract wild guessers; for example:

The reference process of meaning

- ☐ (a) suggests that words refer to symbols.
- ☐ (b) connects a symbol with an object
- ☐ (c) suggests that words are not arbitrary.
- ☐ (d) relies on an S-R theory.

The wild guesser who chooses *a* because of the words *reference* and *refer* is not likely to have picked a bargain. (The correct answer is *b*.)

3. If one answer is definitely longer than the other choices, *the longer answer is more likely to be the correct one.* Instructors often feel that they need to include enough information to make the answer choice clear; for example:

Public opinions that are fluid

- ☐ (a) change very little.
- ☐ (b) exist as potential.
- ☐ (c) can change dramatically as a result of events.
- ☐ (d) have not crystallized.

Note that *c*, the correct answer, is longer than the other three choices.

4. In a carelessly written exam, you may be able to *eliminate on grammatical grounds one or more of the possible answers.* You would rarely see this on a college exam. For example:

Acromegaly is an

- ☐ (a) decrease in the size of an adult's jaw, hands, and feet.
- ☐ (b) decrease in growth hormones.
- ☐ (c) increase in the size of an adult's jaw, hands, and feet.
- ☐ (d) increase in growth hormones.

Both *a* and *b* can be eliminated because *an* cannot be used before a word beginning with a consonant.

5. For problem questions in a multiple-choice format, look for *answers having numerical relationships* to the numbers stated in the problem, either by multiplication, division, addition, or subtraction. For example:

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A and B are two points in an electrical field. If 6.0 joules of work are done in moving 2.0 coulombs of electric charge from point A to point B, then the potential difference between points A and B is

- _____ (a) 1.5 volts
- _____ (b) 2.0 volts
- _____ (c) 3.0 volts
- _____ (d) 12.0 volts

The numbers given in the problem are 6.0 and 2.0. Of the possible answers, only *c* and *d* are simple mathematical combinations of these numbers. Therefore, it is likely that one of them is the correct answer. Choice *b* should be eliminated because it repeats one of the numbers stated in the problem.

6. *Learning information from one test question to answer others* is a test-taking technique that can be extremely useful. This technique is more difficult to apply than any previously described because learning from the test itself cannot be applied routinely and mechanically. One reason you should routinely read over the test before beginning to answer any of the items is to see if any of the items are related.

Application Exercise (DTT)

By now, you should have applied the study methods from this text to the chapter in the Appendix, "The Stormy Sixties." Now apply the discussion of pointers for taking objective tests to the sample test that follows. This exercise should also serve to prepare you for an actual chapter test on "The Stormy Sixties."

Multiple-Choice

1. Kennedy's economic policies included
 - (a) greater government spending.
 - (b) cutbacks in space exploration.
 - (c) price controls on steel and other manufactured goods.
 - (d) general tax cuts to get more money into private hands.
2. Kennedy's civil rights bills were
 - (a) defeated by Republicans and Southern Democrats.
 - (b) the result of the Black Power Movement.
 - (c) passed only after his assassination.
 - (d) abandoned by Lyndon Johnson.
3. Why was the Tonkin Gulf episode so significant?
 - (a) It led to giving the President greater power in declaring or escalating war.

- (b) It signaled the beginning of the end of American involvement in Vietnam.
 - (c) It permitted the first use of nuclear arms in the Vietnam conflict.
 - (d) It demonstrated the inability of Americans to win a war in South-east Asia.
4. The doctrine of “flexible response” was all of the following *except*
- (a) a reason to build up various military options for appropriate responses to different situations.
 - (b) a rationale for Kennedy to sharply increase American military involvement in Vietnam.
 - (c) the motivation to develop highly destructive nuclear warheads.
 - (d) a policy that allowed for progressive stepping-up of force.
5. The Bay of Pigs invasion
- (a) was an escalation of the war in Southeast Asia.
 - (b) served to push Fidel Castro even more under the Soviets’ influence.
 - (c) was first conceived by the Kennedy administration.
 - (d) happened in response to the Soviets putting nuclear missiles in Cuba.
6. Charles de Gaulle, the French leader,
- (a) thought the Americans unreliable and so developed his own nuclear bombs.
 - (b) was in favor of increased American influence in Europe.
 - (c) assisted in establishing a multinational nuclear arm within NATO.
 - (d) blocked a united “Atlantic Community” by vetoing the United States’ application to the Common Market.
7. Which of these leaders was *not* assassinated in the 1960s?
- (a) Martin Luther King, Jr.
 - (b) Barry Goldwater
 - (c) Malcolm X
 - (d) John F. Kennedy
8. The 1963 coup that overthrew Diem, the American-backed leader of Vietnam,
- (a) was encouraged by the U.S.
 - (b) was supported by the Communist Viet Cong.
 - (c) contributed to more political deterioration in Vietnam.
 - (d) all of the above
9. Johnson’s Great Society programs included all of the following *except*
- (a) Medicare for the elderly.
 - (b) large increases in aid to education.

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- (c) major tax cuts.
- (d) the creation of the Department of Housing and Urban Development.

10. The Voting Rights Act of 1965

- (a) marked the end of the era of peaceful civil rights campaigns.
- (b) resulted in riots in Watts, a section of Los Angeles.
- (c) was opposed by Black Power leaders.
- (d) was enacted as a result of the assassination of Dr. Martin Luther King, Jr.

Matching

- | | |
|-----------------------------------|-----------------------------|
| _____ 1. Nuclear missiles in Cuba | (a) Stokely Carmichael |
| | (b) John F. Kennedy |
| | (c) Charles de Gaulle |
| _____ 2. "Segregation forever" | (d) Martin Luther King, Jr. |
| | (e) Barry Goldwater |
| | (f) Lyndon Johnson |
| _____ 3. "New Frontier" | (g) Dwight D. Eisenhower |
| | (h) Nikita Khrushchev |
| | (i) George Wallace |
| _____ 4. Nonviolent resistance | |
| _____ 5. "Great Society" | |

Answers to Sample Test Items

Multiple-Choice

1. d
2. c
3. a
4. c
5. b
6. a
7. b
8. d
9. c
10. a

Matching

1. h
2. i
3. b
4. d
5. f

Essay Tests

Both the preparation for and the approach to taking essay exams differ considerably from those for objective tests. Professors use essay tests to test for the amount of knowledge you have on a broad topic. Generally, essay questions test your ability to answer higher-level questions. In order to be successful in college, you must become proficient in taking both essay and objective tests.

Preparing for Essay Exams

The strategy we suggest for essay-exam preparation can also be used, although not quite as effectively, for objective tests. This strategy relies heavily on your ability to predict questions that might be asked on the actual exam. This kind of prediction is generally not very difficult if you have read and annotated your text properly, paid attention in class, taken good lecture notes, and rehearsed and reviewed on a consistent basis. If you have kept up in class, you should be able to predict at least some of the questions your instructor will ask.

The strategy we suggest is called PORPE—*Predict, Organize, Rehearse, Practice, and Evaluate*.¹ The procedures take the following form:

1. *Predict (two or three days before the test)*: From your reading, annotating, lecture notes, and study strategies, predict enough essay questions to cover the material. Write questions that cover larger issues and be sure that some questions are of the higher-level type.

In addition to your notes, you can get prediction questions from:

- the syllabus
 - the chapter questions or study guides
 - “retired tests”
 - chapter boldface headings or italicized words
 - ideas the instructor stresses in lectures
2. *Organize (two days before the exam)*: Organize the key ideas and major details for each of your predicted questions. Use an outline, a map, or a jot list, making sure you list each key idea and its supporting details together. Be concise, but include all of the important ideas and facts from the course handouts, readings, and lectures.

¹ M. L. Simpson, “PORPE: A Writing Strategy for Studying and Learning,” *Journal of Reading*, 29(5), 1986, pp. 407–414.



Figure 11C

Applying positive study strategies helps students to demonstrate what they know at exam time. (© Susan Lapidès)

3. *Rehearse (two days before the exam):* In this step you should review and learn the organization to each predicted question.

First, test yourself on the main ideas. Continue going over them until you know all the main ideas and can say them without looking at your outline, map, or jot list.

Next, go over the main ideas one at a time and review all of the supporting details for each idea. As you rehearse each one, repeat the main idea and details aloud until you can do so without looking at your paper. Additionally, look for the relation between the main ideas.

Lastly, rehearse your list of main ideas and details again the next day. You may find that you have forgotten some points. Keep rehearsing until you again can go through the whole list without looking at your notes.

4. *Practice (one day before the exam):* When you have finished the rehearsal stage on the second day of study, practice writing answers to the predicted questions. Write from memory, as if you were really taking the

exam. If you have trouble answering one of the questions, go back and rehearse your main ideas and details again, then write the answer from memory.

5. *Evaluate (one day before the exam)*: Reread your answers and make sure you included all the main ideas and details from your outline, map, or jot list. If you missed many points, rehearse and practice writing again.

Once you have all of the main ideas and important details included, evaluate how you presented your answer. Use the questions in Figure 11.1 as a guide. If you can answer *yes* to all the questions, you are ready for the exam. If any of the questions are answered *no*, work on revising the answer.

Figure 11.1 *Checklist for Evaluating Essay Answers*

Answer yes or no to these questions:

1. Did I directly answer the question that was asked?
2. Did I have an introductory sentence which restated the essay question and/or took a position on the question?
3. Did I organize the answer so that key ideas or points were obvious?
4. Did I include relevant details or examples to prove and clarify each idea?
5. Did I use transitions in the answer to cue the reader? (e.g., "First . . .," "Another major idea . . .," "Equally important . . .," "Finally . . .")
6. Did my answer make sense and demonstrate a knowledge of the material?

Although your predicted essay questions may not always match perfectly with those of your instructor, the chances are that at least some of the material you prepared will be included on the test. As you go through this preparation process over and over again, you should also find that your predictions are more likely to be in line with your instructor's questions. Even if your questions do differ from the instructor's, you will find, if you have used PORPE, that you can usually modify what you prepared to answer the instructor's questions.

Taking the Essay Exam

Certain guidelines for taking essay tests are helpful. Keeping these in mind will increase your performance on an essay exam.

1. *Be prepared*. No amount of proficiency in stating, developing, and evaluating ideas can take the place of knowledge. Professors can easily spot when you have written an answer devoid of supporting statements.

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Filling a page with empty words does not mean that you have answered a question. Studying will help you to write an essay answer with substance.

2. *Read all the essay questions through.* Jot down beside each question the points that occur to you. This process is especially important if you are given a choice of questions to answer (such as, "Do any three of the following five questions"). The brief lists also get you thinking, and you are less apt to leave important information out of your answer.
3. *Answer the questions that you know most about first.* As on objective tests, this procedure builds your confidence and stimulates thought; it may also help you to think of information that you need to answer the remaining items. Make sure that you number the questions, especially if you answer them out of order. Professors don't like to search for your answers.
4. *Allow time to answer all of the questions.* You must be able to budget your time. If the class is fifty minutes long, and you have three questions to answer, spend about 10 or 15 minutes on each question, allowing yourself some time at the end of the period to proofread. When you are writing hurriedly, it is easy to leave out or misspell words and endings.
5. *Bring out the structure and logic of your main ideas in your writing.* A good answer includes the following:
 - a first sentence that restates the question
 - a listing of the major ideas to be covered in the essay
 - for each main point, a general statement followed by relevant supporting details
 - transitions between the main points to give coherence
 - a brief concluding statement

By writing each answer in this manner, you will be more organized in your writing and thinking. The student who writes disorganized essay answers risks losing points.

6. *If pressed for time, answer your last question in outline form.* If you have adequately budgeted your time, this step should not be necessary. However, if you are running out of time, outlining the remaining question(s) will at least indicate to your professor your knowledge of the answer. Although you probably will not receive full credit for your effort, you may get partial credit.
7. *Avoid rambling.* Get to the point. A professor who has 30 or 40 students in a class, each of whom has answered three essay questions, is not going to be thrilled by an answer that goes on and on and is devoid of pertinent information. Say what you have to say in a structured manner as explained above, and move on to the next question. Remember, it is *quality*, not quantity, that counts.

In summary, practice making up your own essay questions and writing out the answers. Try to predict essay questions and answer them, or get to-

gether with a classmate and answer each other's questions. Prediction not only gives you practice in structuring an answer but also serves as a rehearsal strategy. Any time that you can reach two goals using one procedure, so much the better.

The following application puts you in the professor's place. Using what you have learned about writing answers to essay items, particularly the way in which good answers should be constructed, give each of the answers a grade. By the way, these are actual student responses.

Application Exercise

For an example of what you might expect as a typical essay question in a Western Civilization course, read the following item. Following the question are student responses; one of them received an *A*, one a *C*, and one an *F*. Can you determine which is which? Why?

Question: The fifteenth- and sixteenth-century voyages of exploration produced lasting changes in the political and social structures of Western Europe. Would you say that these voyages tended to hasten or to delay the growth of national states? Explain.

Student 1

Grade _____

I don't think one can make a decision about whether these voyages were positive or negative. I mean they caused competition sometimes because people wanted to raise cattle and stuff like that but that doesn't mean that they helped or hurt.

Personally, I think it hurt because people probably went to war to fight over cattle and corn and stuff. And besides, explorers had a hard time getting around. They certainly didn't have airplanes like we have today but their maps were kinda good because some guy whose name was Harry (or Henry—something like that) made an important contribution. It seems like they sure didn't know very much in the old days cause some things happened that weren't planned.

In sum, I guess that the trips hastened the growth for the things I said in this essay.

Student 2

Grade _____

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The explorations of the fifteenth and sixteenth centuries hastened the growth of the national states. The reasons have to do with danger, wealth, trade, and pride.

One of the prime reasons for the beginning of national states was a common danger from outside. Because countries went to war over the right to control certain colonies and trade routes, they had to unite within in order to fight off an aggressor.

Other forms of competition between one country and another contributed to the growth of national states. Competition was fierce for land. The resources of the new lands (such as coffee, spices, minerals) were considered valuable.

The voyages of exploration is a rather ambiguous term because actually there was no sudden burst of interest in exploring the world around them—they just were looking for easier trade routes to the Orient. This so-called age of exploration if it was indeed exploring was quite by accident.

When the first countries colonized the “New World” every other country now wanted to get in on it. However, to make voyages in the first place, knowledge was needed in ship-building and navigation. Henry the Navigator bettered the conditions of European states by contributing to navigation, maps, etc. It is, therefore, easy to see that without fifteenth and sixteenth century exploration the national states would have grown more slowly.

Student 3

Grade _____

There are three reasons why the explorations of the fifteenth and sixteenth centuries hastened the growth of the national states.

The first reason was trade because people wanted coffee, tea, and spices, since they were considered valuable products.

The second reason was greed. Many countries wanted to control certain colonies because of the wealth they possessed. Because of this greed there were wars that led to much killing and bloodshed.

Finally, the key reason was money (of sorts). Those who controlled the colonies also controlled the wealth because of the fact that the colonies usually had resources that were worth a lot.

All of these students answered the same question, yet their answers varied considerably. Think about the content of each answer. Think about the grade you would assign each. These examples should give you a good idea of the type of information to include and how to structure your essay.

Key Words Used in Essay Questions

Students often fail to answer essay questions adequately because they do not fully understand the terminology used in the questions. For example, if you

are asked to *compare* two theories and you *contrast* them, you will probably receive very few points. The list that follows is included simply to familiarize you with key words that frequently appear in essay questions. You may already know many of them, but it is to your advantage to learn those that you do not know and to review those that you do know. Remember that many times more than one key word is used in a question (for example, “*List* the most important causes of the Korean War, and *justify* your answer”). Make sure that you read questions carefully and answer all parts.

The following list is organized into the three categories of questions discussed earlier in this text: memory- and higher-level questions. The categories are only rough guidelines, however; some of the memory questions, for example, also require you to do some interpretation, a higher-level skill.

Memory-Level Key Words

- | | |
|--|--|
| 1. Define | Definitions call for concise, clear meanings. Make sure that your definition is the one used for that subject matter. The definition should sound authoritative, as if written by the textbook author. Details are usually not required, but the definition should include: the class to which the term belongs; the usual context in which it is used; limitations to the use of the term; and whatever differentiates it from other items in the same class. |
| 2. Describe
Outline
State
Summarize | All four of these key words ask you to give an organized description. You should give main points and important supporting information. Leave out minor details. Present the information in an organized fashion, with the main points clearly stated first and supporting information following. |
| 3. List
Enumerate | These key words ask you to prepare a list or an outline. Write out, point by point (with numbers, if possible), the answer. These questions also require you to be <i>brief</i> and not to go into much detail. |
| 4. Diagram
Illustrate | <i>Diagram</i> and <i>illustrate</i> require you to explain something or to clarify another answer, by giving concrete examples, figures, or diagrams. To <i>illustrate</i> usually means to give concrete examples; to <i>diagram</i> means to give a graphic presentation, with labels to identify parts. |

5. Trace

To *trace* means to follow the development of something, from its beginning to some other point. You might trace historical events that led to some conflict, or a series of scientific discoveries that led to a major breakthrough. In any case, you should begin at the point of origin and proceed, step by step, to the culmination.

Higher-Level Key Words

1. Compare
Contrast
Relate

These key words ask you to examine two or more ideas, issues, or results in a critical way. To *compare* usually means to state the *similarities*. To *contrast* means to state the *differences*. To *relate* means to emphasize whatever connections or associations might exist. A good strategy for these questions is first to *describe* or *define* the things individually, and then to discuss the similarities, differences, or associations.

2. Discuss
Explain
Interpret
Review

These key words all call for complete and detailed answers. You are being asked first to define a term, event, quality, concept, or problem. Second, you are being asked to state the how or why—to interpret the definition or to elaborate on it. To *discuss* usually means to state the events or conditions that gave rise to the issue or results. To *review* requires a critical examination with comments that elaborate. Sometimes, however, to *review* simply asks for a list. To *criticize* means to express your judgment about the correctness or the merit of factors under consideration, describe the factors, and give the results of *your own* analysis. Discuss limitations and good points.

4. Evaluate

To *evaluate* also means to express judgment, but from more of an authoritative than a personal point of view. Follow the same format as for *criticize* questions.

5. Justify
Prove

These key words ask you to prove or to give evidence in support of some conclusions, events, or decisions. Your job is to convince the reader that the evidence supports the conclusions. To *justify* usually means to give evidence or arguments in favor of the conclusion; your personal arguments may be included. To *prove* also means to give evidence, but you need to use authoritative evidence and make a stronger case. Both terms are usually used as the second part of two-part questions ("Explain . . . and justify your answer").

Application Exercises (DTT)

1. Read the following essay questions from "The Stormy Sixties." Select one, and construct a well-written answer according to the guidelines discussed in this section.
 - (a) Trace the events that began American involvement and then escalated this involvement in the war in Vietnam.
 - (b) Compare the successes of John F. Kennedy and Lyndon B. Johnson in establishing civil rights and human service programs.
 - (c) The author states that the passage of the Voting Rights Act of 1965 marked the end of civil rights campaigns in the South led by peaceable moderates. It also marked the beginning of protests and violence in the North. Discuss this important change and explain at least two reasons why it occurred.
2. Predict two additional essay questions for "The Stormy Sixties." Using one of your questions
 - (a) prepare an outline, map, or jot list (as discussed in the section on PORPE).
 - (b) go through the "Rehearse" step of PORPE until you feel you know the material without looking.
 - (c) write a "Practice" essay.
 - (d) "Evaluate" your essay, using the checklist in this chapter.

Application Exercises (Your Courses)

1. Predict two essay questions for one of your courses. Use a course that is likely to have essay questions on an exam. For *both* of these questions
 - (a) prepare an outline, map, or jot list (as discussed in the section on PORPE).

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- (b) go through the “Rehearse” step of PORPE until you feel you know the material without looking.
- (c) write a “Practice” essay.
- (d) “Evaluate” your essay, using the checklist in this chapter.

Test Anxiety

A great number of students experience such extreme anxiety in a testing situation that it sabotages their performance. To learn your test-anxiety level, rate yourself from 1 to 5 on each of the following items. If the statement is *always* true for you, give yourself a 5. If it is *never* true for you, give yourself a 1. If you are not at either extreme, give yourself a 2 for “rarely,” a 3 for “sometimes,” and a 4 for “often.”

1. I have visible signs of nervousness such as sweaty palms, shaky hands, and so on right before a test.

1 2 3 4 5

2. I have “butterflies” in my stomach.

1 2 3 4 5

3. I feel nauseated.

1 2 3 4 5

4. I read through the test and feel that I do not know any of the answers.

1 2 3 4 5

5. I panic.

1 2 3 4 5

6. My mind goes blank.

1 2 3 4 5

7. I remember the information that I blanked on once I get out of the testing situation.

1 2 3 4 5

8. I have trouble sleeping the night before a test.

1 2 3 4 5

9. I make mistakes on easy questions or put answers in the wrong places.

1 2 3 4 5

10. I have difficulty choosing answers.

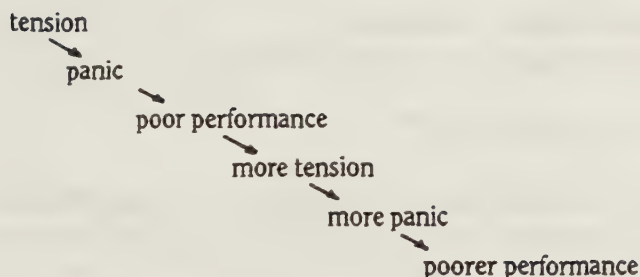
1 2 3 4 5

If you gave yourself 4's or 5's on several of these questions, you may suffer from test anxiety. Although no medication can cure the suffering, understanding what test anxiety is and what causes it will go a long way toward controlling it.

Many students experience test anxiety because they have not prepared well. It becomes a defense against taking the blame for poor preparation. If you prepare well and feel confident that you know the material, your test anxiety should be greatly reduced. Remember that there is a difference between feeling anxiety when you are not prepared and feeling anxiety when you are prepared. If you are well prepared and still experience extreme nervousness in a testing situation, consider these suggestions:

- *Allow yourself plenty of time to get to the test*; do not rush. If you are anxious before the test, you will be anxious during it.
- *Deliberately relax before a test*. Do not look through your notes right before a test, because you probably are not going to learn any more information anyway. A last-minute cramming session may only tense you up even further.
- *Do not talk to others before the test*, because anxiety is contagious. If someone asks you a question on the test material and you are not sure of the answer, you might become anxious. To avoid this problem, just sit quietly thinking about the material you studied.
- *Have a plan of attack*. Those who do not know their plan of attack are the ones who panic. Think ahead of time about how you are going to approach the test. For example, remember to do the easy items first. This strategy will increase your confidence and probably reduce your anxiety. Some students feel most comfortable by doing the essay questions first; others do multiple-choice questions first. You do not have to work through the test in the order in which the questions are presented.
- *Relax during the test*. Some tension is normal and actually good for you; accept it. Use the tension constructively to help you concentrate. But if you are too anxious—if you panic—it spirals you down:

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Learn how to handle your tension and anxiety through desensitization. Anxiety cannot exist if the body is relaxed. Try this brief exercise immediately preceding the exam; it may help relieve excess tension.

1. Take several slow deep breaths, exhaling slowly and at the same time letting your shoulders drop in a relaxed manner. Inhale deeply; count—one, two, three, four, five. Then exhale slowly—six, seven, eight, nine, ten. Do this several times.
2. Turn your head slowly—right ear to right shoulder (count one, two, three), head back (four, five, six), left ear to left shoulder (seven, eight, nine), head forward (ten, eleven, twelve). Do this twice clockwise and then twice counter-clockwise.
3. Make a fist with both hands and deliberately hold them for five counts. Now slowly extend the fingers, releasing the tension in your arms. Do this several times. This exercise helps you to feel the difference between tension and relaxation.

- *Avoid superstitions.* Students often get into trouble because they begin to watch the responses. When they start running a succession of “trues” or “b’s”, they think they should not be making the same responses so many times in a row. This is not necessarily true. Most instructors have not set up any kind of a pattern.

If you follow the suggestions in this chapter for taking objective exams, essay exams, and reducing test anxiety, chances are that your performance will improve. But reading the suggestions and putting them into practice are two different things. As with the other suggestions in this book, you must practice to become proficient.

Key Ideas

1. Doing well on exams requires the application of the strategies discussed in this text.
2. Careful planning and daily reviewing are two key components of scoring high on exams.
3. Preparing for objective tests differs considerably from preparing for essay tests.

4. Approach all test-taking systematically.
5. Excessive anxiety can hamper your test performance.

Application Exercise (DTT)

1. For most of the applications in this chapter, we have used “The Stormy Sixties” as an example. For this exercise, use one of the other chapters from the Appendix. The chapters have tests that go with them.
 - (a) Read, annotate, and study the chapter.
 - (b) Use the study strategies and test-preparation strategies we have discussed in this chapter.
 - (c) *Take the test* that goes with the chapter.
 - (d) Write an essay that discusses
 - how well I did on the test.
 - what study strategies I used and how well they worked in preparing for the test.
 - what test-preparation strategies I used and how well they worked.
 - what I would do differently in preparing for this test again.

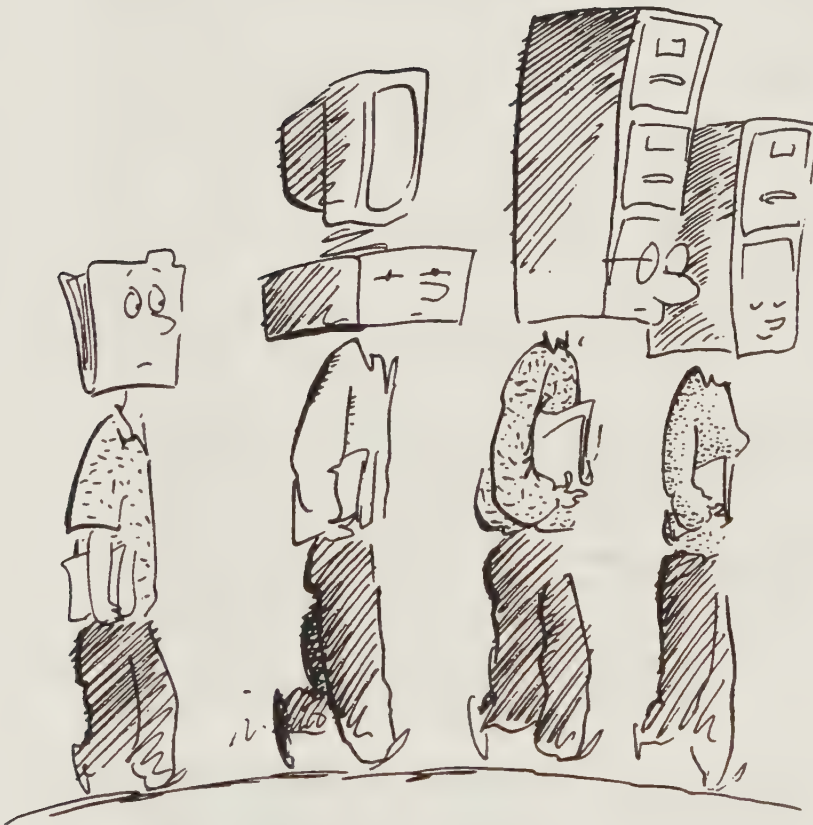
Application Exercise (Your Courses)

1. As you prepare for tests in your courses, use the study and test-preparation strategies we have discussed in this textbook. After you get the results back from one of your tests, write an essay that discusses
 - (a) how well I did on the test.
 - (b) what study strategies I used and how well they worked in preparing for the test.
 - (c) what test-preparation strategies I used and how well they worked.
 - (d) what I would do differently in preparing for this test again.

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CHAPTER *12*

Memorization Skills



I Can't Remember. Why?

Another very important ability that you must have in order to succeed in college is the ability to remember. Every other skill depends on it. Being able to read is useless if you can't remember what you read. The same goes for hearing and all of your other abilities. You need to be able to remember in order to learn.

Fortunately, all of us have the capacity to remember, but not all of us have *developed* our memory abilities to the best advantage, and we all wish at times that we had *better* memories.

That's what this chapter is about—not granting wishes, but learning how to make better use of our memories. An improved memory is something you *make* happen—and you can begin to make it happen starting now.

Important Questions about Your Memory—and the Answers

Often students ask questions about memory and our ability to memorize. Here are several common questions and their answers.

Isn't Ability to Memorize Related to IQ? The answer is no. The people with the highest intelligence do not necessarily have the best memories, nor do people with the lowest IQs have the worst memories. Remember Einstein. He was a good example of a brilliant, but often eccentric, absent-minded professor. In many ways, his memory for formulas, details, and various kinds of factual information was spectacular. But at other times and in other areas, his memory for details was poor. This was probably just a matter of interest or lack of interest, as is the case with most of us. Even people with relatively low IQs sometimes develop phenomenal memories in certain limited areas.

Do Some People Have What Is Commonly Referred to as Photographic Memories? No. Some people have developed their memories much more than most of us, but there is no such thing as a photographic memory that permits you to remember everything you see or read—except on television and in movies.

What about Those Fantastic Memory Demonstrations that I See From Time to Time on Television Where the Memory Expert Memorizes the Names and Faces of the Entire Audience? Will I Be Able to Do That if I Practice? Probably, but you are not likely to devote all the time necessary to practicing that it will take. Those memory demonstrations are impressive, but always the same: names and faces. Provided you too want to specialize in that kind of memorizing, you can develop those skills fairly easily. That won't necessarily help you in college courses, though. Remembering what you need to in your classes takes a different kind of practice.

Can You Destroy Your Memory Ability? Yes, you can. You cannot improve your ability to retain information if you walk around saying "I have a lousy memory" or "I never can remember anything." You will damage your memory ability, because as a result of saying (and thinking) things like this, you will tend to live up to your statements.

Forgetting Is Normal, But That's No Excuse

Scores of jokes have been written about people with poor memories and the difficulties and misunderstanding that result. At times we all have wanted to be able to memorize instantly everything we saw or read. But that would be bad for us if it were possible, because our minds couldn't contain all the information that would be crammed into them. We'd probably go insane if we couldn't immediately forget 99 percent of everything we saw. Think of all the things that it is important to forget: tragedies, pain, disappointment, unimportant detail of all sorts, and so forth. Forgetting is normal—and healthy.

But forgetting as easily as we do is unnecessary. Developing the ability to **selectively remember** what you want to remember must be your goal.

The Reasons Students Don't Remember What They Want to Remember

In spite of the fact that students say they want to improve their memories, there is little evidence that it is happening. Why?

Physical Hindrances. A few students may have physical hindrances that keep them from improving their memories. Any disease or injury tends to weaken a person's ability to remember. Fatigue works the same way. As a person gets increasingly tired, he (and his memory) is less able to react actively to information. Many studies have shown that as the day lengthens, memory ability decreases. Loss of sleep also low-

ers the ability to memorize. Alcohol and drugs cause poor retention and shorten memory.

Emotional and Psychological Hindrances. Nearly any strong feeling will lower our ability to memorize. The emotion may be one of anger, joy, frustration, grief, stage fright, hatred, guilt, jealousy, or even mild displeasure. We sometimes even *think* ourselves into a poor memory by laughingly declaring that we have a poor memory and downplaying our ability to remember, and then we may actually find it necessary to prove it by forgetting things. Any personal concern that occupies our minds will hinder our memory. It is an impossible task for us to remember one thing when we are concentrating on something else.

Lack of Motivation. Another very important reason why students don't improve their memories is that they really see no important reason for doing so. Nothing has motivated them to the point where they will take the extra effort and time to begin training themselves in better methods of memorizing. Sometimes the threat of course failure or flunking out of school acts as the necessary motivation, but usually it comes too late.

A Weak Impression. It's very easy to forget something that never made a strong impression on us to begin with. This could stem from one or more of the following:

- Not paying attention to the information.
- Not thinking the information important.
- Not having or taking the time to learn the information in the first place.

Disuse. Much like a muscle in the body, you must use your memory in order for it to function at its best. Research indicates that unless you do something to retain information, almost everything you learn will be forgotten within several hours. The Retention Curve in Figure 19.1 shows just how quickly we forget. For example, the graph shows that you forget *50 percent of what you learn within an hour and about 70 percent in two days*. Fortunately there are specific techniques you can learn in this chapter to prevent or slow down this forgetting.

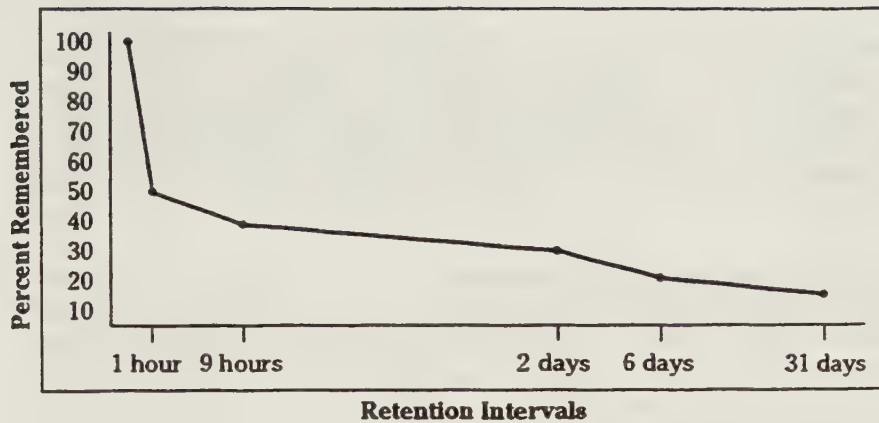


FIGURE 12.1 Retention Curve

Interference. A poor learning situation during a memory activity, or confusing situations can cause memory interference. For example, it is not a good idea to try to study geometry immediately after algebra. Your memory will be confused by similar figures, terms, and symbols. Likewise, it would be difficult to memorize works of Shakespeare and then works by Dryden or Donne. Also, it is definitely not a good idea to attempt to memorize anything while watching television or listening to the radio. Nor is it a good idea to attempt to memorize while driving. In these examples there is too much confusion or interference to make memorizing efficient.

Confusion of Long-Term and Short-Term Memory. The confusion between long-term and short-term memory often causes students to feel that there are only certain things that they can remember, such as telephone numbers (because they have no trouble remembering their home number, work number, friends' numbers, and so on). At the same time they feel that it is impossible to remember things like names, dates, facts, ideas, or other "testable" data. Much of this feeling can be eliminated once we understand that we unconsciously decide many times a day whether we wish to remember something for a short time or for a long time. This *unconscious selection* determines how we memorize.

For instance, most of the things we need to remember during a day we only need for a few minutes or just for that day, so we do not *intend* to remember them. This lack of intention causes us to forget very quickly. The address of a shop we visit, the telephone number of the movie theater, the prices of various products in the stores, the name of a waitress, and the combination of a lock in the locker room at the health club are all examples of short-term memory at work.

On the other hand, there are many things that we *intend* to remember for a long time and so we do: our family members' birthdays, our grandparents' phone numbers, the plot of a great book or movie, our social security numbers, and much more. Why do we easily retain this information? Because we "know" there is value in remembering it for the future.

Steps to Improved Memory

There are some things you can begin doing now to develop a stronger memory.

Intend to Remember

We don't remember things we don't want to remember or don't intend to remember. Remind yourself of how important the course material is that you must remember. Fully intending to remember something, even stating that intention aloud, will assist you in improving your memory. When you know you will be tested on a book, your efforts to retain information increase appreciably.

Pay Attention

Being aware is an important step in developing an improved memory. Begin to notice the part of the page on which the instructor points out important information. Listen for clues to what really seems to be important *for the instructor* and then note it. This increased awareness heightens your receptivity for information and puts the information into long-term memory (or at least until the need for the information is over).

Make Certain You Understand

Though it may sound obvious, make sure you understand thoroughly whatever you want to remember. If something doesn't make sense, it's very difficult to remember. This applies equally to all areas including mathematics, poetry, foreign languages, sciences, history, and every content area you will study in college.

React Actively

There are two kinds of memory: passive and active. *Remembering* is passive memory. It is automatic. It is accomplished without effort and is too often all that is used by college students who do not really plan to give college a good try. Students cannot passively remember enough in

college courses to successfully pass their courses. *Recollection*, on the other hand, is active memory. In this case, an attempt is purposely made to recall data. Passive memory needs no training because it is automatic. It also does not necessarily retain what is essential for passing exams. Active memory relies on methodical and systematic effort to retain selective data. This active effort takes several forms.

Repeat It. The more fully we react to what we want to remember, the better our chances of recalling it when we need to. When we repeat (read, hear, say, or write) the information to be remembered several times immediately and then repeat it regularly over several days, our retention is likely to be adequate and long lasting. Remembering is always assisted by repetition, but when that repetition is spaced at regular intervals over several days rather than attempted all at once, the retention is quite dramatic. Repetition over regularly spaced intervals is a simple technique for more efficient remembering.

Write It Down. Even the brainiest people forget more than they remember, and about one-half of what they believe they remember is at least partly inaccurate. Writing things down reinforces what you want to remember. This has the obvious benefit of giving you a record for further reference in the future, but it also forces you to review and concentrate much more intensively on what you intend to remember. When you write it down, you not only think the thought once very rapidly before you write, but you think the thought again *as* you write—only this time much more slowly. Most of the world's achievers have made use of this principle. They are always carrying around three-by-five-inch cards or notepads and jotting things down. Some students don't write things down because they think not writing it down will strengthen their memories if they depend on memory alone. Nonsense. Write it down.

Say It Aloud. Another way to help yourself remember things is to talk to yourself so that you can hear clearly what you are saying. The most efficient way to combine reading and reciting is to first read silently and rapidly to get the overview of the material. Then from time to time pause to recite the gist of what you have read in the last few minutes. When reading and reciting are combined in this manner, most students will easily find that they can remember much more and for a longer period of time.

Group Things Together. We also remember things more easily by combining the things to be memorized into patterns or groups. The typical student can fairly easily remember a span of seven or eight numbers. The student with the span of eight numbers can occasionally remember ten. But this stretching does have its limits. When a student stretches too

much, something snaps. If the student with the natural span of eight tries to remember eleven numbers, he often finds that his memory shrinks to five or six. However, if the same student divides the numbers into two groups of six each, he can very often remember a span of twelve numerals.

A rule follows from this. Whenever you have long lists to remember, group them into smaller units that seem to fit naturally together.

Use Mnemonic Devices. Mnemonics are memory tricks, or aids, that you can devise to help you remember information. Mnemonics include such things as **rhymes**, **acronyms**, nonsense words, sentences, or mental pictures that aid in recall. Rhymes are commonly employed to aid our remembering. Fortunately, nearly all of us still rely on them for such things as remembering whether to use “ie” or “ei” in spelling:

I before E
Except after C
Or when sounding like A
As in neighbor or weigh.

Acronyms are words or phrases formed from the initial letters of another group of words, phrases, or sentences. For example, the word *snafu*, from the military, is an acronym for “Situation Normal, All Fouled Up.” You may have learned the colors of the spectrum by remembering *Roy G. Biv*, each letter stands for one of the colors in the spectrum: **Red**, **Orange**, **Yellow**, **Green**, **Blue**, **Indigo**, **Violet**. Mnemonic devices are useful when trying to remember information that has no inherent organization of its own.

Create Mental Pictures. One very good way to remember specific incidents, historical events, people, processes and procedures, or just about anything, is to try creating mental pictures of what you want to remember. The more unusual and absurd the mental pictures you create, the more likely you are to recall the words or information you associate with it. You are in effect using the bizarre, easily remembered mental pictures to remind you of what is harder to recall—the facts. Use the following ideas to create vivid mental pictures:

- Imagine some kind of *action* or *movement* taking place.
- Form an image that is *out of proportion*, absurdly large or tiny.
- Create in your mind an *exaggerated* version of the subject.
- Change or *reverse* a normal rule. The change will be obvious and will remind you of what you need to remember.

Exercise 12.1 *Retention*

Use the information you learned on page 348 and by looking at Figure 19.1 and answer the following questions:

1. After reading a science text at night, how much information will you remember the next morning? _____
2. After hearing a lecture on Tuesday, how much of it will you remember on Thursday if you have a pop quiz on it? _____

3. What do you think you will remember of a lecture on Shakespeare after one week if you did not take notes? _____
4. Why do you have to take and review notes if you are not going to be tested for at least a month? _____

5. What does the information shown on the retention curve tell you about forgetting? _____

Exercise 12.2 *Hindrances to Memory*

Without looking at what you just read in this chapter, list as many reasons as you can for not remembering what you want to remember.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Now go back and check the reasons. How many did you remember?

Exercises 12.3 *More Hindrances to Memory*

Create a mnemonic device that will enable you to remember the seven major hindrances to remembering.

1. Physical hindrances
2. Emotional and psychological hindrances
3. Lack of motivation
4. A weak impression
5. Disuse
6. Interference
7. Confusion of long-term and short-term memory

Mnemonic device:

Exercise 12.4 *Improving Memory*

Of the steps to improved memory discussed in this chapter, some work better when applied to certain classes than to others. List the courses you are taking this term and then indicate the one or more steps to improved memory that you believe will work best with each course.

Courses	Memory Techniques
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

Exercise 12.5 *Visualizations*

Devise visualizations for each of the following and briefly describe what you would visualize. Remember, the more bizarre the better.

1. The year 1776: _____

2. The French Revolution: _____

3. The play *King Lear* by Shakespeare: _____

4. Paranoid schizophrenia: _____

5. The Civil War, 1860: _____

6. The planets of the solar system; Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto: _____

7. The five types of societies; hunting, gathering, pastoral, horticultural, agricultural, industrial: _____

8. The First Continental Congress: _____

9. Hawthorne, Poe, Melville: _____

10. *A Farewell To Arms* by Ernest Hemingway: _____

Exercise 12.6 *Memory Techniques*

In a paragraph or two, describe what is happening in your mind when you remember peoples' names, faces, telephone numbers, and addresses; details; ideas; and when you remember what you are reading and learning in classes.

APPENDIX A

SELECTIONS FROM MAGAZINES

NO JURY WOULD SAY THE LABEL DIDN'T WARN US

1 CAUTION: The Surgeon General has determined that reading
2 this page can cause confusion, apathy, and reckless abandon
3 with household appliances.

4 Once, Americans lived with danger. We roamed the range.
5 We poled flatboats. O Pioneers, we tamed the wilderness! Now
6 we are mostly settled, couched in serenity. I worried about
7 that. Was I losing the bold pioneer spirit? Then I began read-
8 ing labels.

9 CAUTION: DO NOT REMOVE THIS TAG! NEVER im-
10 merse your microwave oven in water! DO NOT allow children
11 to climb INSIDE your microwave oven! NEVER put metal in
12 your microwave oven, not even if someone dares you! NEVER
13 put pets, small wild animals, or IGNEOUS ROCKS in your
14 microwave oven! Your oven has been built to provide a lifetime
15 of safe cooking. Enjoy!

16 Danger used to lurk outside my cabin, but now it has come
17 inside. I live in terror that quite by accident I will do some-
18 thing gauche with an appliance and cause Armageddon in
19 my kitchen. Every year there are more cautions.

20 CAUTION: Your blender is designed to provide years of
21 quality blending. DO NOT stick pieces of barbwire in your
22 blender! NEVER operate your blender in a moving vehicle!
23 DO NOT turn your blender upside down while it is in use!

24 In our pioneer days, cautions were few. God-fearing settlers
25 kept their blenders upright at all times. Then somewhere for
26 some reason someone flipped one over. Someone totaled a
27 kitchen. Someone sued. Someone won a dream kitchen with
28 Mexican tile. Now we are cautioned, and no jury can say they
29 didn't warn us.

30 CAUTION: Your electric blanket was carefully assembled
31 to give a world of warmth. NEVER submerge your electric
32 blanket IN THE OCEAN! AVOID eating gooey finger foods
33 while using your electric blanket! NEVER use your electric
34 blanket OUTSIDE IN A THUNDERSTORM!

35 There are tribes, entire *nations*, that ritually abuse their
36 appliances, but not I. For years I lived in fear of being arrested
37 for removing the tag from my pillow. And having read that I
38 should NEVER use my electric blanket outside in a thunder-
39 storm, I didn't. My wife knew someone who did once. Seems
40 his dog was shivering in the doghouse during a nor'easter, so
41 this guy rigged up an extension cord and . . . Rover survived the
42 voltage but was never the same. Open and shut case, his lawyer
43 said. He could count on millions in damages to compensate for
44 emotional trauma to his dog. But the jury read the label.

45 CAUTION: Treated properly, your toaster will give a life-
46 time of browned bread. NEVER immerse your toaster in
47 gelatinous substances! DO NOT insert fingers, hands, or toes
48 into toaster slots! NEVER JAM PAPER, PLASTIC, TWIGS,
49 OR GRASS IN TOASTER FOR ANY REASON! DO NOT
50 USE your toaster to store compact disks! AVOID tipping your
51 toaster while it is IN USE! NEVER operate your toaster while
52 handling heavy equipment!

53 Most of these seemed reasonable. I would *never* operate my
54 toaster while handling heavy equipment. My wife knew some-
55 one who did once. And you'd never catch *me* toasting up a loaf
56 while driving my forklift. But why couldn't I *tip* my toaster?
57 What was the big deal?

58 I was growing careless about cautions. DO NOT, NEVER,
59 AVOID—we're only human, after all. (Imagine God's cautions
60 to Adam and Eve: Your garden has been designed to last a
61 lifetime. DO NOT EAT ANY FRUITS OFFERED BY SER-
62 PENTS! NEVER TEMPT EACH OTHER WITH EXCESSIVE
63 WARNINGS!) The more cautions I obeyed, the more I wanted
64 to risk it all, just once.

65 Late at night, when cautious people were snug under their
66 electric blankets avoiding gooey finger foods, I stole into the
67 kitchen, dropped a slice of bread in the toaster, then inch-by-
68 inch lifted one side. The bread was turning brown. I tipped to
69 a 30-degree angle, 45 . . . 50 . . . 60. At precisely 90 degrees,
70 the toast popped up and shot across the counter.

71 That was *it*? For *that* someone sued and won a vacation
72 home in Aruba? But then, perhaps I'd just dodged a bullet.
73 Danger being my middle name (actually, it's Edward), I tried
74 it again, tipping at jaunty angles—lateral, obtuse, acute. I
75 flew the toaster around the kitchen hoping for a minor explo-
76 sion, a shower of sparks. The toast popped up, golden every
77 time. O Pioneers!

78 In a silent kitchen late at night, it's easy to throw caution
79 to the wind. What other warnings were just so much fearmon-
80 gering? Toaster in hand, I stalked the counters. I jammed a
81 phone book and credit cards into the slots. No go. In the bath-
82 room I did ghastly things to my toaster with patent medicines.
83 It sat there inert. I was lowering the toaster into a batch of
84 tapioca pudding when my wife came downstairs.

85 "What are you *doing*?" She saw the pudding and grabbed
86 the toaster just in time. "Didn't you read the manual?" She
87 rummaged through a drawer and found it. "NEVER immerse
88 your toaster in gelatinous substances!" Do they have to tattoo
89 it on your forehead? What's wrong with you?"

90 "The pioneers," I managed to blurt out. "O Pioneers."

91 "No pioneers ever immersed toasters in tapioca," she as-
92 sured me. "It's 3 A.M. Come to bed. And put those CDs away."

93 "I'll be right up," I said. "Just let me get some gooey finger
94 foods."

95 I'm a reasonably wary American, but ever since that night
96 I haven't trusted warnings. The next time you're cautioned
97 NOT to open your VCR with your electric can opener, you'll
98 know who's behind it. I'm the guy your wife knows who tried
99 it. Someone's got to keep the pioneer spirit alive.

—By Bruce Watson, from "No Jury Would Say Label Didn't Warn Us," *Smithsonian*, vol. 23, no. 2, May 1992, 164. Reprinted with permission of the author.

1. If the author were delivering this passage orally, his tone of voice would probably be
 - a. earnest.
 - b. farcical.
 - c. serious.
 - d. joyous.
2. In line 47, the word *gelatinous* refers to
 - a. a cold-water rinse.
 - b. a sauce of Spanish origin.
 - c. a warm-water rinse.
 - d. a jellylike substance.

3. The writer of this passage probably
- dislikes toasters.
 - has a vacation home in Aruba.
 - wants to see more warning labels on things.
 - sees himself as taking pioneering risks when defying warning labels.
4. The writer of this passage says that his middle name (along with Edward) is
- Danger.
 - Courage.
 - Pioneer.
 - Caution.
5. In this passage, the writer shows bias in favor of
- warning labels.
 - pioneers.
 - toasters.
 - igneous rocks.
6. The paragraph beginning in line 16 ("Danger used to lurk . . .") reveals the main idea of this passage, which is
- living in the old days was dangerous.
 - accidents will happen.
 - danger that used to be outside is now inside.
 - there is an increase in accidents every year.
7. What does the sentence beginning in line 39 ("Seems his dog . . .") do in relation to the sentence beginning in line 33 ("NEVER use your . . .")?
- It illustrates what was said in line 33.
 - It contradicts what was said in line 33.
 - It shows the order of something said in line 33.
 - It clarifies something said in line 33.
8. The statement made in the sentence beginning in line 99 ("Someone's got to keep . . .") implies
- that we ought to get rid of all warning labels on appliances.
 - that periodically we ought to quit what we are doing and move.
 - that the days of the pioneers were superior to the present.
 - that it is pioneering to defy warning labels.
9. It is apparent that the author's purpose in this passage is to
- poke fun at warning labels.
 - defend warning labels.
 - criticize warning labels.
 - compare life today with life in the past.
10. In line 74, the word *jaunty* means
- fast-moving.
 - sprightly, lively.
 - curving.
 - mathematically determined.

STRESS AND WORKPLACE VIOLENCE

1 Almost everyone experiences stress in one form or another.
2 Stress may cause such things as anxiety or high blood pres-
3 sure. Occasionally, however, the level of stress experienced by
4 an individual may become so great that it pushes that person
5 over the edge. He or she may then take action that results in
6 destruction or even death. For example, consider the case of
7 James Daniel Simpson, a quiet and reserved young man who
8 no one ever expected to cause trouble.

9 Throughout his high school years in El Paso, Simpson was
10 quiet and reserved. He never caused any problems, but made
11 few friends. Classmates and neighbors recall him as being po-
12 lite and dependable. They also note that he didn't talk much
13 and usually kept to himself. He moved to Corpus Christi
14 in 1992 and went to work for the Walter Rossler Company.
15 Rossler performs consulting work for area refinery industries
16 and specializes in ultrasonic inspections. Rossler paid \$1,900
17 for Simpson to enroll in some training courses at a local col-
18 lege. Like other employees who took advantage of Rossler's
19 training incentive, Simpson signed an agreement to repay the
20 money if he left the company for any reason within three years
21 of the date of the agreement. The agreement itself was dated
22 November 3, 1993.

23 By all accounts Simpson was an average worker—his work
24 was acceptable, but he did not distinguish himself in any way.
25 He occasionally came to work late, but his overall performance
26 was satisfactory. The only complaint that Simpson himself
27 voiced was to object to the company's policy requiring employ-
28 ees to come and go through the back door. He resented this
29 policy because a few managers and secretaries were "exempt"
30 and were allowed to use the front door. In September 1994 he
31 quit his job at Rossler and began to look for other work. After
32 repeated attempts to recover the money it had spent for Simp-
33 son's training, Rossler filed a lawsuit against him on Novem-
34 ber 1, 1994. The suit was eventually settled out of court with
35 Simpson agreeing to repay \$700 of the total amount. Rossler
36 also provided unsatisfactory references for Simpson as he con-
37 tinued to search for a new job.

38 Over the next six months, Simpson's savings dwindled, and
39 his prospects for work disappeared. In February 1995 he pur-
40 chased two guns from a local dealer. Shortly thereafter, he ran
41 out of money and pawned his television, one of his last assets.
42 On the afternoon of Monday, April 3, 1995, Simpson drove to
43 a local park and fired several shots into the air. After leaving
44 the park, he drove to the offices of Walter Rossler Company
45 and parked in front of the building. His former coworkers at
46 Rossler had often chided him for using an antitheft alarm in
47 his old, beat-up Subaru. On this day, however, he did not
48 bother to set the alarm.

49 He walked directly to the building and entered through
50 the front door. Once inside, he systematically walked through
51 the facility, shooting and killing five people. It appeared that
52 he was seeking out specific targets. As he approached each

53 one, Simpson first cursed them and then shot them. Along the
54 way, he bypassed at least two employees without so much as a
55 second glance. He also spared Lisa Rossler, daughter of the
56 owners, and her infant son. Simpson then walked out through
57 the back door of the building and into a small shed. Once in-
58 side, he killed himself with a single shot to the head.

Sources: "Employers on Guard for Violence," *Wall Street Journal*, April 5, 1995, pp. 3A; "Dialing the Stress-Meter Down," *Newsweek*, March 6, 1995, p. 62; and personal research by the author.

—From *Management* by Ricky W. Griffin. Copyright © 1999 by Houghton Mifflin Company. Reprinted with permission.

1. The statement beginning in line 53 ("Along the way . . .") is a statement of
 - a. fact
 - b. opinion
2. The main idea of this passage is that
 - a. workplace violence is increasing.
 - b. workplace stress frequently results in violence.
 - c. workplace stress may have pushed Simpson over the edge.
 - d. workplace stress made Simpson an unpopular worker.
3. The overall pattern of organization of this passage is
 - a. summary.
 - b. simple listing.
 - c. contrast.
 - d. generalization and example.
4. From the statement beginning in line 5 ("He or she . . .") you can infer that the writer believes
 - a. workplace stress caused Simpson to commit murder.
 - b. workplace stress caused bad employee relationships.
 - c. workplace stress caused employers to react improperly.
 - d. workplace stress caused employers to react properly.
5. The author's purpose in this passage is to
 - a. state a problem.
 - b. suggest an alternative.
 - c. inform.
 - d. discuss something.
6. The tone of this passage is
 - a. distressed.
 - b. serious.
 - c. critical.
 - d. vindictive.
7. The sentence beginning in line 51 ("It appeared . . .") is a statement of
 - a. fact.
 - b. opinion.
8. The statement beginning in line 6 ("For example . . .") is an example of which kind of reasoning?
 - a. sound
 - b. unsound
9. The writer of this passage shows bias against
 - a. pawnshops.
 - b. workplace violence.
 - c. high stress.
 - d. employee training courses.
10. The writer of this passage treats individuals mentioned
 - a. objectively.
 - b. angrily.
 - c. humorously.
 - d. piously.

Practice Essays

The following two selections (one from a periodical and one from a textbook) provide you with the opportunity to check your comprehension of what you are reading by answering a variety of comprehension questions on each essay. As you work through the questions, you should feel free to refer to the reading selection if necessary. Work quickly but carefully.

1 *Case I:* A young couple was found murdered in a campground,
2 with no apparent clues except that the woman had been raped.
3 From the DNA evidence, a paroled felon was identified. It was
4 shown later that he was in a nearby town the night before the
5 crime, had no alibi for the time of the crime, and was traced to
6 a Florida city where he was apprehended. *Case II:* A 10-year-
7 old girl was molested by a man she identified as a "large black
8 man." A local handyman fitting that description was said by
9 an eyewitness to have been in the vicinity near the time of the
10 crime. The individual so identified was found to have a previ-
11 ous record of child molestation, but on checking his DNA he
12 was found to be clearly innocent and was never even brought
13 to trial.

14 The power of DNA fingerprinting is well illustrated by
15 these two cases, which tell of the conviction of a guilty man
16 who otherwise was unlikely to have been connected with the
17 crime and the lack of charges against an innocent person who
18 would, in the opinion of experts, have probably been convicted
19 on the basis of the eyewitness testimony.

20 A new National Academy of Sciences report provides
21 strong support for the use of DNA fingerprinting in legal pro-
22 ceedings. The report argues that rigorous controls should be
23 incorporated into the procedure with accreditation and advice
24 provided at the federal level; the report did not suggest the
25 need for a moratorium until perfection is achieved. The sci-
26 entific and judicial communities should support the recom-
27 mendations expressed in the report that blood samples be
28 studied and archived in order to further strengthen the statis-
29 tical interpretation of the data. Continuing to use DNA evi-
30 dence while finetuning the methodology even further seems
31 the appropriate path. Unfortunately, the *New York Times*
32 broke the embargo on the Academy report in a front-page
33 story on Tuesday (14 April) and got the bottom-line message
34 wrong. Ironically, the paper published an editorial on Satur-
35 day (18 April) stating that, thanks to computers, the old-fash-
36 ioned thumbprint fingerprinting has been a gigantic boon to
37 law enforcement and was even better than its early boosters
38 had predicted. When the original fingerprint idea was intro-
39 duced into courtrooms (it had been used previously by officials
40 in our colonial days to prevent forgery), many worried whether
41 fingerprints were indeed unique and if the police could be
42 trusted to use them.

43 DNA fingerprinting, like all new tools of forensics, must be
44 proven step by step. The emotional appeal that the associated
45 probabilities must be perfect to be admitted as evidence ig-
46 nores the frailties of the usual courtroom evidence. Eyewitness
47 testimony is often absent in murder cases and is frequently
48 unreliable in rape cases. This is especially alarming since
49 cases of rape and attempted rape increased by 59% in the
50 United States last year compared to the previous year. In fact,
51 DNA fingerprinting as it is used today, and certainly as it will
52 be improved in the future, has a stronger scientific basis than

53 many other types of evidence. Less reliable types of evidence
54 have been used for many years in court cases; justice can only
55 be served better by a technique with higher standards.

56 Contrary to those who see DNA fingerprinting as a tool
57 solely for the prosecutor, its value may be even more powerful
58 for the defense. A figure of 33% (which is quoted by many
59 forensic scientists but was unverifiable as of this writing) is
60 given for the number of "suspects" (individuals for whom there
61 is enough other evidence to go to trial) who are exonerated
62 and not brought to trial because of DNA evidence. Scientists
63 should not be concerned with whether DNA fingerprinting
64 evidence is more useful for the prosecution or the defense.
65 Rather, they should be concerned with the accuracy of the
66 results and the reliability of the method as performed by com-
67 mercial laboratories. For the moment, scientists can say that
68 (i) a new powerful tool to establish the truth has been pro-
69 vided, (ii) it is so powerful that it is important to maintain and
70 improve its reliability, and (iii) any tool that aids in the estab-
71 lishment of truth is to the benefit of society. The Academy re-
72 port, which if anything errs on the side of caution, still clearly
73 states that we must proceed and that DNA fingerprinting
74 should have a positive influence for more objective courtroom
75 testimony. There should be room for controversy and doubts
76 to be expressed in any new step, but exaggerated concerns
77 over minor imperfections should not be allowed to halt the
78 application of a new tool of science to a better and more just
79 future.

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Testimony," *Science Magazine* by Daniel E. Koshland, Jr., vol. 256, May
1992. Copyright © 1992 by the American Association for the Advancement
of Science.

1. The main idea in this passage is that
 - a. DNA fingerprinting provides a new method of effectively identifying and convicting criminals.
 - b. Using DNA fingerprinting evidence is not likely to work and will allow criminals to be set free.
 - c. Using DNA fingerprinting evidence while perfecting the methodology seems to be the best way to proceed.
 - d. DNA fingerprinting needs further study and testing before being allowed in courtrooms as evidence.
2. In line 25, the word *moratorium* means
 - a. period of delay.
 - b. period of increased use.
 - c. examination by a judge.
 - d. examination by scientists.
3. The number of "suspects" who are exonerated and not brought to trial because of DNA evidence is
 - a. 18 percent.
 - b. 33 percent.
 - c. 59 percent.
 - d. 72 percent.

4. Which statement from the passage best illustrates the main idea in the passage?
- a. Rigorous controls should be incorporated into the procedure.
 - b. The old-fashioned thumbprint fingerprinting has been a gigantic boon to law enforcement.
 - c. The emotional appeal that the associated probabilities must be perfect for DNA fingerprinting to be admitted as evidence ignores the frailties of the usual courtroom evidence.
 - d. There should be room for controversy and doubts to be expressed.
5. In line 32, the word *embargo* means
- a. secret.
 - b. pattern.
 - c. deadlock.
 - d. stoppage.
6. The writer of this passage feels that scientists should be concerned with
- a. accuracy of results and reliability of laboratory methods.
 - b. whether DNA evidence is more useful to the prosecution or the defense.
 - c. the accuracy of DNA fingerprinting compared with standard fingerprinting methods.
 - d. whether they are qualified to testify in court hearings.
7. The author *did not* come to the conclusion that
- a. DNA, a new, powerful tool to establish truth, has been introduced.
 - b. standard fingerprinting is less reliable than DNA fingerprinting.
 - c. DNA is such a powerful tool that it is important to maintain and improve its reliability.
 - d. any tool that aids in the establishment of truth is to the benefit of society.
8. In line 61, the word *exonerated* means
- a. declared guilty.
 - b. escaped felons.
 - c. mentally deficient.
 - d. cleared from blame.
9. In this passage, it is stated that support for the use of DNA fingerprinting was generated by
- a. the conviction rate of felons where DNA testing was used.
 - b. the inaccuracies found in traditional fingerprinting.
 - c. a National Academy of Sciences report.
 - d. a scientific commission studying new fingerprinting methods.
10. In this passage, the National Academy of Sciences report was said to be
- a. farfetched.
 - b. cautious.
 - c. unbelievable.
 - d. biased.

Hire Education

Marc Levinson

Do you need college to get a good job?

Everybody's heard the news: more than ever before, if you want to make a buck you've gotta have the skills. The payoff to education has increased enormously in the 1990s, and the consequences are reverberating through schools everywhere. Just listen to parents demanding more computers in their third grader's classroom, or to teens who've figured out that dropping out of school means low wages forever. But while everyone talks about preparing today's kids for tomorrow's job market, one obstacle blocks the way. By and large, educators, parents, and students themselves don't have a clue as to what the job market demands.

That's what makes *Teaching the New Basic Skills*, by economists Richard Murnane and Frank Levy, such an important book. Murnane, who teaches at Harvard's Graduate School of Education, and Levy, who's at MIT, are best known for carefully dissecting the causes of America's slow income growth and rising inequality. Remember all those stories about the wage gap? That's Murnane and Levy. But instead of bewailing the problem, Murnane and Levy have turned their research into a practical guide for citizens who are mystified by the information economy. If you worry whether your local schools are preparing kids for good jobs at good wages, this is the book to read.

The underlying story is familiar enough. Workers whose education ended with high school are suffering sharp drops in real wages. That fact, Murnane and Levy say, has led millions of kids to make the hugely expensive mistake of going to college. Yes, college grads earn more, but almost all of that earnings increase can be predicted from a person's math test scores as a high-school senior. They overstate the case a bit; you can't become a big-ticket biochemist without a B.A. But Murnane and Levy assert that there are plenty of middle-class jobs available to high-school grads who skip college—if they've learned the right stuff.

Like what? For Murnane and Levy, "basic skills" mean far more than literacy, numeracy, and knowledge of Western culture's one hundred greatest hits. After studying how a host of companies do their hiring, they conclude that memorizing spelling lists and math tables doesn't make a young person employable. Workers need to be able to apply English and math to solve practical problems. And when it comes to succeeding on the job, initiative, flexibility, and teamwork belong right up there with reading, writing, and math. By pushing "hard" skills alone, they say, "Many of today's schools continue to educate children for an economy that no longer exists."

Murnane and Levy don't refight the old battles over school choice and statewide performance standards. Instead, they offer a startlingly simple suggestion. Each school should evaluate itself as a business might—not with internal measures such as test scores but by looking at how its products fare in the marketplace. The key question: Where are the children who graduated from this school two years ago? If they're not succeeding in their current setting, something is seriously wrong. Drawing on examples like ProTech, a Boston program that combines apprenticeships with a tough curriculum, they show how schools can analyze their own shortcomings and use that information to enlist teachers and parents in a process of change. Schools, unlike businesses, almost never look at how customers value their products. Unless they do, Murnane and Levy argue convincingly, advocates of school reform are just shooting in the dark.

YOU CAN'T TAKE IT WITH YOU

Pay-now life insurance

What do I know about buying life insurance?

Heaven forbid you should become terminally ill. But imagine for a moment that you did. What good is that life-insurance policy you've been paying into for years? It's a paradox: you can't take it with you, but it's of little use until you're dead.

Why is this idea controversial?

Now a fledgling Albuquerque company is offering to buy the policies of dying people for a discount. The seller gets ready cash and Living Benefits gets the full value of the policy after the client passes away.

Like so many controversial ideas, this one originated with a radio phone-in show. Insurance agent Rob Worley Jr. was listening to a program on the way home one day in 1986 when he heard a caller say he was 36 years old with a \$100,000 policy, no family and six months to live. The man had asked both his insurance company and his bank to buy his policy for \$50,000 so he could live a little before he died. They had refused.

Would the family still receive benefits after the loved one's death?

Not bereaved or bereft: Where other listeners heard a tragedy, Worley sensed an opportunity. In the six months Living Benefits has been in business, Worley and his father say they have attracted some two dozen clients, all suffering from AIDS. (Although victims have accused insurers of balking on AIDS-related claims, the company avoids the problem by refusing to buy policies that are less than two years old, the usual legal limit for insurance companies to contest claims.) Living Benefits asks potential clients to prove that they are terminally ill and then offers a discount that usually ranges from 60 to 75 percent, based on factors such as monthly premiums, interest-rate levels and how long the client is likely to live.

What are the advantages and disadvantages?

Living Benefits also doesn't want to leave relatives both bereaved and bereft: it will not buy a policy unless each beneficiary signs a waiver. And the client has 15 days after the check is issued to cancel the deal. The elder Worley says his program is best suited for people with solid assets in addition to their policy and those who desperately need the money to pay medical bills and creditors: "Living Benefits is not for everybody."

How fast is the idea catching on?

The idea has drawn its share of critics. "I found it to be extremely repugnant when I first heard of it," said New Mexico Deputy Insurance Commissioner Ted Knight, who was behind a failed attempt by the New Mexico Legislature to outlaw such transactions. Knight said he trusts the Worleys, whom he called "very up-and-up." He said, "I have a problem with the next company that wants to do this." Prof. Joseph Belth of Indiana University, who writes on insurance issues, has called the Living Benefits idea "a system for the exploitation of the terminally ill" and noted that such companies would have "a financial interest in the insured's early death."

Despite the criticism of the Living Benefits plan, a number of mainstream insurance companies are trying out similar provisions in policies. They are also generally termed "living benefits" provisions and advance a portion (usually 25 percent) to clients before death, supplying the rest to the beneficiaries afterward. Doug Close, assistant general counsel of Executive Life Insurance Company in Los Angeles, said his company was preparing one such provision. Asked why the idea hadn't started with insurance companies themselves, Close said companies might have feared an image problem. "We'd look like ghouls," he said.

Whatever detractors may say, Living Benefits' customers are happy to have a choice. The company's first client, a 42-year-old physician with AIDS, will shortly receive a check for \$72,000 in exchange for his \$121,000 policy. "One of my best friends said she thought the idea was sick—but I told her it's just the opposite. It gives me an opportunity to keep my house, to take a trip—I have so many things to look forward to. This summer I plan to plant flowers, to read, to be in peace." Living Benefits is clearly helping some people that insurance-industry giants have failed—but not without generating troubling questions as well as profits.

Source: J. Schwartz, "You Can't Take It With You," *Newsweek*, May 8, 1989, p. 45.

APPENDIX B

**SAMPLE TEXTBOOK CHAPTERS
& LIBRARY ASSIGNMENT**

THE STORMY SIXTIES

In the final analysis it is their war. They are the ones who have to win it or lose it . . . the people of Vietnam.

John F. Kennedy, September 1963

Kennedy's New Frontier Spirit

Hatless and topcoatless in the 22 degrees Fahrenheit chill (minus 5 degrees Celsius), youthful John F. Kennedy delivered a stirring inaugural address on January 20, 1961. Tall, elegantly handsome, speaking crisply and with staccato finger jabs at the air, Kennedy personified the glamor and vigor of the new administration. The youngest president ever elected, he assembled one of the youngest cabinets, including his thirty-five-year-old brother Robert as attorney general. "Bobby," the president quipped, would find the experience useful when he began to practice law. Business whiz Robert S. McNamara left the presidency of the Ford Motor Company to take over the Defense Department. Along with other youthful, talented advisers, they made up an inner circle of "the best and the brightest" men around the president.

From the outset Kennedy inspired high expectations, especially among the young. His challenge of a "New Frontier" quickened patriotic pulses. He brought a warm heart to the Cold War when he proposed the Peace Corps, an army of idealistic and mostly youthful volunteers to bring American skills to underdeveloped countries. He summoned citizens to service with his clarion call to "ask not what your country can do for you: ask what you can do for your country."

Himself Harvard-educated, Kennedy and his Ivy League lieutenants (heavily from Harvard) radiated confidence in their abilities. The president's personal grace and wit won him the deep affection of many of his fellow citizens. In an unprecedented gesture, he invited white-maned poet Robert Frost to speak at his inaugural ceremonies. The old Vermont versifier shrewdly took stock of the situation. "You're something of Irish and I suppose something of Harvard," he told Kennedy—and advised him to be more Irish than Harvard.

The New Frontier at Home

Kennedy came into office with narrow democratic majorities in Congress. Southern members of his own party threatened to team up with Republicans and lay the ax to New Frontier proposals such as medical assistance for the

aged and increased federal aid to education. Kennedy won a first round in his campaign for a more cooperative Congress when he forced an expansion of the all-important House Rules Committee, dominated by conservatives who could have bottled up his entire legislative program. Despite this victory, the New Frontier did not expand swiftly. Key medical and education bills remained stalled in Congress.

Another vexing problem was the economy. Kennedy had campaigned on the theme of "getting the country moving again" after the recessions of the Eisenhower years. While his advisers debated the best kind of economic medicine to apply, the president tried to hold the line against crippling inflation. His administration helped negotiate a noninflationary wage agreement in the steel industry in early 1962. The assumption was that the companies, for their part, would keep the lid on prices.

Almost immediately, steel management announced significant price increases, thereby seemingly demonstrating bad faith. The president erupted in wrath, remarking that his father had once said that "all businessmen were sons of bitches." He called the "big steel" men onto the White House carpet and unleashed his Irish temper. Overawed, the steel operators backed down, while displaying S.O.B. buttons, meaning "Sons of Business" or "Save Our Business."

The steel episode provoked fiery attacks by big business on the New Frontier, but Kennedy soon appealed to believers in free enterprise when he announced his support of a general tax cut bill. He rejected the advice of those who wished greater government spending and chose to stimulate the economy by slashing taxes and putting more money directly into private hands. When he announced his policy before a big business group, one observer called it "the most Republican speech since McKinley."

For economic stimulus as well as for military strategy and scientific prestige, Kennedy also promoted a multibillion-dollar project to land an American on the moon. When skeptics objected that the money could best be spent elsewhere, Kennedy "answered" them in a speech at Rice University in Texas: "But why, some say, the moon? . . . And they may well ask, why climb the highest mountain? Why, thirty-five years ago, fly the Atlantic? Why does Rice play Texas?" Twenty-four billion dollars later, in 1969, two American astronauts triumphantly planted human footprints on the moon's dusty surface.

Rumblings in Europe

A few months after settling into the White House, the new president met Soviet Premier Khrushchev at Vienna, in June 1961. Kennedy sought cooperation, but the tough-talking Russian adopted a belligerent attitude, threatening to make a treaty with East Germany and cut off Western access to Berlin. Visibly shaken, the president refused to be bullied. Upon returning, he requested an increase in the military budget and called up reserve troops for the

possible defense of Berlin. The Soviets backed off from their most bellicose threats but suddenly began to construct the Berlin Wall in August 1961. A barbed-wire and concrete barrier, it was designed to plug the heavy population drain from East Germany to West Germany. But to the free world the "Wall of Shame" looked like a gigantic enclosure around a concentration camp.

Kennedy meanwhile turned his attention to Western Europe, now miraculously prospering after the tonic of Marshall Plan aid and the growth of the American-encouraged Common Market, or commercial union. He finally secured passage of the Trade Expansion Act in 1962, authorizing tariff cuts of up to 50 percent to promote trade with Common Market countries. This legislation led to the so-called Kennedy Round of tariff negotiations, concluded in 1967, and to a significant expansion of European-American trade.

But not all of Kennedy's ambitious designs for Europe were realized. American policymakers were dedicated to an economically and militarily united "Atlantic Community," with Uncle Sam the dominant partner. But they found their way blocked by towering, stiff-backed Charles de Gaulle of France. The Frenchman was suspicious of American intentions in Europe and on fire to recapture the *gloire* of Napoleonic France. With a haughty "non" he vetoed British application for Common Market membership in 1963. He likewise dashed cold water on an American proposal to develop a multinational nuclear arm within NATO. De Gaulle deemed the Americans unreliable in a crisis, so he tried to preserve French freedom of action by developing his own small atomic force ("farce," jibed his critics). Despite the perils of nuclear proliferation or Soviet domination, de Gaulle demanded an independent Europe, free of Yankee influence.

Foreign Flare-Ups and "Flexible Response"

Special problems for American foreign policy emerged from the worldwide decolonization of European overseas possessions after World War II. The African Congo received its independence from Belgium in 1960 and immediately exploded into violence. The United Nations sent in a peacekeeping force, to which Washington contributed much money but no manpower. Critics complained that increasingly Uncle Sam was picking up the tab for United Nations operations, while the organization itself was becoming dominated by the numerous newcomer nations from once-colonial Asia and Africa.

Sparsely populated Laos, freed of its French colonial overlords in 1954, was festering dangerously by the time Kennedy came into office. The Eisenhower administration had drenched this jungle kingdom with dollars but failed to cleanse the country of an aggressive Communist element. A red Laos, many observers feared, would be a river on which the influence of Communist China would flood into all of Southeast Asia.

As the Laotian civil war raged, Kennedy's military advisers seriously considered sending in American troops. But the president found that he had insufficient forces to put out the fire in Asia and still honor his commitments in Europe. Kennedy thus sought a diplomatic escape hatch in the fourteen-power Geneva conference, which agreed on the neutralization of Laos in 1962.

These "brushfire wars" intensified the pressure for a shift away from Secretary Dulles's dubious doctrine of "massive retaliation." Kennedy felt hamstrung by the knowledge that in a crisis he had the Devil's choice between humiliation or nuclear incineration. With Defense Secretary McNamara, he pushed the strategy of "flexible response"—that is, developing an array of military "options" that could be precisely matched to the scope and importance of the crisis at hand. To this end, Kennedy increased spending on conventional military forces and bolstered the Special Forces (Green Berets). They were an elite antiguerrilla outfit trained to survive on snake meat and to kill with scientific finesse.

Stepping into the Vietnam Quagmire

The doctrine of "flexible response" seemed sane enough, but it contained lethal logic. It potentially lowered the level at which diplomacy would give way to shooting. It also provided a mechanism for a progressive, and possibly endless, stepping-up of the use of force. Vietnam soon presented a grisly demonstration of these dangers.



Vietnam and Southeast Asia

The corrupt and conservative Diem government in Saigon, despite a deluge of American dollars, had ruled shakily since the partition of Vietnam in 1954. Anti-Diem agitation, spearheaded by the local Communist Viet Cong and encouraged by the red regime in the north, noisily threatened to topple the pro-American government from power. In a fateful decision late in 1961, Kennedy ordered a sharp increase in the number of "military advisers" (U.S. troops) in South Vietnam.

American forces had allegedly entered Vietnam to foster political stability—to help protect Diem from the Communists long enough to allow him to enact basic social reforms favored by the Americans. But the Kennedy administration eventually despaired of the reactionary Diem and encouraged a successful coup against him in November 1963. Ironically, the United States thus contributed to a long process of political disintegration that its original policy had meant to prevent. Kennedy still told the South Vietnamese that it was "their war," but he had made dangerously deep political commitments. By the time of his death, he had ordered more than fifteen thousand American men into the far-off Asian slaughter pen. A graceful pullout was becoming increasingly difficult.

Cuban Confrontations

Uncle Sam regarded Latin America as his backyard, but his southern neighbors feared and resented the powerful Colossus of the North. Kennedy extended the hand of friendship with the Alliance for Progress (*Alianza para el Progreso*), hailed as a Marshall Plan for Latin America. A primary goal was to help the Good Neighbors close the gap between the calloused rich and the wretched poor, and thus quiet Communist agitation. But results were disappointing; there was little alliance and even less progress. American handouts had little positive impact on Latin America's social problems.

President Kennedy also struck below the border with the mailed fist. He had inherited from the Eisenhower administration a CIA-backed scheme to topple Fidel Castro from power by invading Cuba with anti-Communist exiles. Trained and armed by Americans and supported by American air power, the invaders would trigger a popular uprising in Cuba and sweep to victory—or so the planners predicted.

On a fateful April 17, 1961, some twelve hundred exiles landed at Cuba's Bay of Pigs. Kennedy had decided from the outset against *direct* intervention, and the ancient aircraft of the anti-Castroites were no match for Castro's air force. In addition, no popular uprising greeted the invaders. With the invasion bogged down at the Bay of Pigs, Kennedy stood fast in his decision to keep hands off, and the bullet-riddled band of anti-Castroites surrendered. Most of the invaders rotted for two years in Cuban jails but were eventually "ransomed" for some \$62 million worth of American drugs and other supplies. President Kennedy manfully assumed full responsibility for the failure, remarking that "victory has a hundred fathers, and defeat is an orphan."

The Bay of Pigs blunder naturally pushed Castro even further into the Soviet embrace. Wily Chairman Khrushchev lost little time taking full advantage of his Cuban comrade's position just 90 miles (145 kilometers) off Florida's coast. In October 1962 the aerial photographs of American spy planes revealed that the Russians were secretly and speedily installing nuclear-tipped missiles in Cuba. The Soviets evidently intended to use these devastating weapons to shield Castro and to blackmail the United States into backing down in Berlin and other trouble spots.

Kennedy and Khrushchev now began a nerve-racking game of "nuclear chicken." The president flatly rejected air force proposals for a "surgical" bombing strike against the missile-launching sites. Instead, on October 22, 1962, he ordered a naval "quarantine" of Cuba and demanded immediate removal of the threatening missiles. He also served notice on Khrushchev that any attack on the United States from Cuba would be regarded as coming from the Soviet Union and would trigger nuclear retaliation against the Russian heartland.

For an anxious week Americans waited while Soviet ships approached the patrol line established by the United States navy off the island of Cuba. Seizing or sinking a Russian vessel on the high seas would unquestionably be regarded by the Kremlin as an act of war. The world teetered breathlessly on the brink of global atomization.

In this tense eyeball-to-eyeball confrontation, Khrushchev finally flinched. On October 28 he agreed to a partially face-saving compromise, by which he would pull the missiles out of Cuba. The United States in return agreed to end the quarantine and not invade the island.

Fallout from the Cuban missile crisis was considerable. A humiliated Khrushchev was ultimately hounded out of the Kremlin and became an "unperson." Hard-liners in Moscow, vowing never again to be humiliated in a nuclear face-off, launched an enormous program of military expansion. The Soviet buildup reached a crescendo in the next decade, stimulating, in turn, a vast American effort to "catch up with the Russians." The Democrats did better than expected in the midterm elections of November 1962—allegedly because the Republicans were "Cubanized." Kennedy, apparently sobered by the appalling risks he had just run, pushed harder for a nuclear test-ban treaty with the Soviet Union. After prolonged negotiations in Moscow, a pact prohibiting trial nuclear explosions in the atmosphere was signed in late 1963. Another barometer indicating a thaw in the Cold War was the installation (August 1963) of a Moscow-Washington "hot line," permitting immediate teletype communication in case of crisis.

Most significant was Kennedy's speech at the American University, Washington, D.C., in June 1963. The president urged Americans to abandon a view of Russia as a Devil-ridden land filled with fanatics and instead to deal with the world "as it is, not as it might have been had the history of the last eighteen years been different." Kennedy thus tried to lay the foundations for a realistic policy of peaceful coexistence with the Soviet Union. Here were the modest origins of the policy that later came to be known as "détente."

The Black Revolutionary Outburst

Kennedy had campaigned with a strong appeal to black voters, but he proceeded gingerly to redeem his promises. He had given a pledge to eliminate racial discrimination in federally funded housing projects "with a stroke of the pen." But it took him nearly two years to find the right pen.

Before long Kennedy was caught up in a convulsive racial revolution. Aroused blacks, impatient at the snail's pace of school desegregation in the Deep South, had begun to force the integration issue in new ways. A "sit-in" at a Woolworth lunch counter in Greensboro, North Carolina, in February 1960 had swelled into a wave of further sit-ins, lie-ins, wade-ins, and pray-ins, to compel equal treatment for blacks in restaurants, transportation, employment, housing, and voter registration. The most distinguished leader of this movement was the Reverend Martin Luther King, Jr., a young, bell-voiced clergyman from Atlanta. He preached Christian love and embraced the non-violent tactics of India's Mohandas Gandhi. Not surprisingly, he was awarded the Nobel Peace Prize in 1964.

In the spring of 1963 King launched a campaign against discrimination in Birmingham, Alabama. A horrified world watched television screens as peaceful demonstrators were repeatedly repelled by the police with fire hoses, attack dogs, and electric cattle prods.

Integrating the southern universities almost brought wholesale slaughter. Some of them desegregated painlessly, but the University of Mississippi became a volcano. A twenty-nine-year-old air force veteran, James Meredith, encountered violent opposition when he attempted to register in October 1962. In the end President Kennedy was forced to send in four hundred federal marshals and three thousand troops. Two men died and scores were injured, but Meredith attended classes. He ultimately graduated—with a sheepskin that cost two lives and some 4 million taxpayer dollars.

In Alabama, Governor George Wallace stood in the doorway to prevent two black students from entering the State University in June 1963. "Segregation now! Segregation tomorrow! Segregation forever!" he shouted. But he soon yielded to federal pressures and let the students pass.

Jolted by these racial confrontations, President Kennedy went on television, June 11, 1963. In contrast to Eisenhower's cool aloofness from the racial issue, Kennedy called the situation a "moral crisis." He pleaded for new civil rights legislation to protect black citizens. In August, Martin Luther King, Jr., led 200,000 demonstrators, mostly black, on a peaceful "March on Washington" to demand more governmental action in the struggle for racial equality.

Still the violence continued. On the very night of Kennedy's stirring television appeal, a white gunman shot down Medgar Evers, a Mississippi civil rights worker. In September 1963 an explosion blasted a Baptist church in Birmingham, killing four black girls who had just finished their lesson called,

"The Love That Forgives." By the time of Kennedy's death, his civil rights bill was making little legislative headway. Frustrated blacks were growing increasingly impatient.

The Killing of Kennedy

Violence haunted America in the mid-1960s, and it stalked grotesquely onto center stage on November 22, 1963. While riding in an open limousine in downtown Dallas, Texas, President Kennedy was shot in the brain by a concealed rifleman and died within seconds. As a stunned nation nursed its grief, the tragedy grew still more unbelievable. The alleged assassin, a furtive figure named Lee Harvey Oswald, was himself shot to death in front of the television cameras by a self-appointed avenger, Jack Ruby. So bizarre were the events surrounding the two murders that even an elaborate official investigation conducted by Chief Justice Warren could not quiet all doubts and theories about what had really happened.

Vice-President Johnson was promptly sworn in as president on a waiting airplane and flown back to Washington with Kennedy's body. Though he mistrusted "the Harvards," Johnson retained most of the bright Kennedy team. The new president managed a dignified and efficient transition, pledging continuity with his predecessor's policies.

For several days, the nation was steeped in sorrow. Not until then did many Americans realize how fully their young, vibrant president and his bewitching wife had cast a spell over them. Chopped down in his prime after only slightly more than a thousand days in the White House, he was acclaimed more for the ideals he had enunciated and the spirit he had kindled than for the concrete goals he had achieved. He had laid one myth to rest forever—that a Catholic could not be trusted with the presidency of the United States. Mass was celebrated only once in the White House—the day of his funeral.

The LBJ Brand on the Presidency

The torch had now passed to craggy-faced Lyndon Baines Johnson, a Texan who towered 6 feet 3 inches (1.91 meters). The new president hailed from the populist hill country of west Texas, whose people had first sent him to Washington as a twenty-nine-year-old congressman in 1937. Franklin D. Roosevelt was a political "Daddy" to him, Johnson claimed, and he had supported New Deal measures down the line. But when LBJ lost a Senate race in 1941, he learned the sobering lesson that liberal political beliefs did not necessarily win elections. He trimmed his sails to the right and squeezed himself into a Senate seat in 1948 with a questionable eighty-seven-vote margin—hence, the ironic nickname "Landslide Lyndon."

Entrenched in the Senate, Johnson developed into a legislative wheeler-dealer. He became the Democratic majority leader in 1954, wielding power

second only to that of Eisenhower in the White House. He could move mountains or checkmate opponents as the occasion demanded, using what came to be known as the "Johnson treatment"—a flashing display of back-slapping, flesh-pressing, and arm-twisting that overbore friend and foe alike.

As president, Johnson quickly shed the conservative coloration of his Senate years to reveal a still-living liberal underneath. He rammed Kennedy's stalled tax cut and civil rights bills through Congress and added proposals of his own for a billion-dollar "War on Poverty." Johnson voiced special concern for Appalachia, where the sickness of the soft-coal industry had left tens of thousands of mountain folk on the human slag heap.

Johnson's nomination by the Democrats in 1964 was a foregone conclusion; he was chosen by acclamation in Atlantic City as his birthday present. He had dubbed his domestic program the "Great Society"—a sweeping set of New Dealish economic and welfare measures aimed at transforming the American way of life.

Johnson Battles Goldwater in 1964

Thanks to the tall Texan, the Democrats stood foursquare on their most liberal platform since Truman's Fair Deal days. The Republicans, convening in San Francisco's Cow Palace, nominated box-jawed Senator Barry Goldwater of Arizona, a bronzed and bespectacled champion of rock-ribbed conservatism. The American stage was thus set for a historic clash of political principles.

Goldwater's forces had galloped out of the Southwest to ride roughshod over the moderate Republican "eastern establishment." Insisting that the GOP offer "a choice not an echo," Goldwater attacked the federal income tax, the Social Security system, the Tennessee Valley Authority, civil rights legislation, the nuclear test-ban treaty, and of course, the Great Society. His fiercely dedicated followers proclaimed: "In Your Heart You Know He's Right," which prompted the Democratic response, "In Your Guts You Know He's Nuts." Goldwater warmed right-wing hearts when he announced that "extremism in the defense of liberty is no vice. And . . . moderation in the pursuit of justice is no virtue."

Goldwater radiated sincerity and charm, but his aggressive "rightism" repelled millions of his own fellow Republicans. The Arizonan also habitually "shot from the lip," notably when he urged that American field commanders be given discretionary authority to use tactical nuclear weapons. Democrats gleefully exploited the image of Goldwater as a trigger-happy cowboy who would "Barry us" in the debris of World War III. This terrifying prospect loomed larger in the closing weeks of the campaign, when Russia's leader, Khrushchev, was sacked and Red China exploded its first nuclear bomb. In such a jittery atmosphere, voters shied away from the six-gun style of the Republican candidate.

Johnson cultivated the image of a resolute statesman by seizing upon the Tonkin Gulf episode early in August 1964. Unbeknownst to the American public or Congress, U.S. Navy ships had been cooperating with South Vietnamese gunboats in provocative raids along the coast of North Vietnam. Two of these American destroyers were reportedly fired upon by the North Vietnamese on August 2 and 4, although exactly what happened remains unclear. Johnson later reportedly quipped, "For all I know, the Navy was shooting at whales out there."

Johnson promptly called the attack "unprovoked" and moved swiftly to make political hay out of this episode. He ordered a "limited" retaliatory air raid against the North Vietnamese bases, proudly proclaiming that he sought "no wider war"—thus implying that the trigger-happy Goldwater did. Johnson also used the incident to spur congressional passage of the all-purpose Tonkin Gulf Resolution. With only two dissenting votes in both houses, the lawmakers virtually abdicated their war-declaring powers and handed the president a blank check to use further force in Southeast Asia.

The towering Texan rode to a spectacular victory in November 1964. The voters were herded into Johnson's column by fondness for the Kennedy legacy, faith in Great Society promises, and fear of Goldwater. A stampede of 43,129,566 Johnson votes trampled the Republican ticket with its 27,178,188 supporters. The tally in the Electoral College was 486 to 52. Goldwater carried only his native Arizona and five other states—all of them, significantly, in racially restless Dixieland. This cracking of the once solidly Democratic South afforded the Republicans about the only faint light in an otherwise bleak political picture. Johnson's record-breaking 61 percent of the popular vote swept lopsided Democratic majorities into both houses of Congress. The inept Goldwater proved to be not so much a candidate as a catastrophe, as some observers predicted that the Grand Old Party was stumbling down the road to the Federalist-Whig cemetery. (Yet sixteen years later Ronald Reagan would sail to victory on a Republican platform quite similar to Goldwater's.)

The Great Society Congress

Johnson's victory temporarily smashed the conservative coalition of southern Democrats and northern Republicans. A wide-open legislative road stretched before the Great Society programs, as the president skillfully ringmastered his two-to-one Democratic majorities. Congress poured out a flood of legislation, comparable only to the output of the New Dealers in the Hundred Days Congress of 1933. Fiscal orthodoxy flew out the window and planned deficits came in the door, as Johnson at last delivered on long-delayed Democratic promises of social reform. The Office of Economic Opportunity, the front line of the Great Society's War on Poverty, had its appropriation doubled to nearly \$2 billion. Congress granted more than \$1 billion to redevelop the gutted hills of Appalachia and voted a slightly greater amount for aid to elementary

and secondary education. Yet the end results proved that poverty could not be papered over with greenbacks.

Johnson neatly avoided the thorny question of separation of church and state by channeling educational aid to students, not schools, thus allowing funds to flow to hard-pressed parochial institutions. (Catholic John F. Kennedy had not dared to touch this prickly issue.) With a keen eye for the dramatic, LBJ signed the education bill in the humble one-room Texas schoolhouse that he had attended as a boy. He also delighted in knowing that all "these Harvards" were working for him, a graduate of Southwest Texas State Teachers' College in San Marcos.

Other landmark laws flowed from Johnson's "hip-pocket Congress." Medicare for the elderly became a reality in 1965. Although it was a bitter pill for the American Medical Association to swallow, the system was welcomed by millions of older Americans who were being pushed into poverty by skyrocketing medical costs.

A tireless Johnson also prodded the Congress into creating two new cabinet offices: the Department of Transportation and the Department of Housing and Urban Development (HUD). He named the first black cabinet member in the nation's history, noted economist Robert C. Weaver, to be secretary of housing and urban development. Other noteworthy laws established a National Endowment for the Arts and Humanities, designed to lift the level of American cultural life, and still other laws sweepingly reformed the long-criticized quota system for immigrants.

The Black Revolution Explodes

In Johnson's native South, the walls of segregation were crumbling, but not fast enough for long-suffering blacks. The Civil Rights Act of 1964 gave the federal government more muscle to enforce school-desegregation orders and to prohibit racial discrimination in all kinds of public accommodations and employment. But the problem of voting rights remained. In Mississippi, which had the largest black minority of any state, only about 5 percent of eligible blacks were registered to vote. The lopsided pattern was similar throughout the South. Ballot-denying devices like the poll tax, literacy tests, and barefaced intimidation still barred black people from the political process.

Beginning in 1964, opening up the polling booths became the chief goal of the black movement in the South. The Twenty-fourth Amendment, ratified in January 1964, abolished the poll tax in federal elections. Blacks joined hands with white civil rights workers—many of them student volunteers from the North—in a massive voter-registration drive in Mississippi during the "Freedom Summer" of 1964. Singing "We Shall Overcome," they zealously set out to soothe generations of white anxieties and black fears.

But events soon blighted bright hopes. In late June 1964 one black and two white civil rights workers disappeared in Mississippi. Their badly beaten bodies were later found buried beneath an earthen dam. FBI investigators

eventually arrested twenty-one white Mississippians in connection with the killings, including the local sheriff. But white juries refused to convict whites for these murders. In August an integrated "Mississippi Freedom Democratic party" delegation was denied its seat at the national Democratic convention. Only a handful of black Mississippians had succeeded in registering to vote.

Early in 1965 Dr. Martin Luther King, Jr., resumed the voter-registration campaign in Selma, Alabama, where blacks made up 50 percent of the population but only 1 percent of the voters. State troopers with tear gas and whips assaulted King's demonstrators as they marched peacefully to the state capital at Montgomery. A Boston Unitarian minister was killed, and a few days later a white Detroit woman was shotgunned to death by Klansmen on the highway near Selma.

As the nation recoiled in horror before these violent scenes, President Johnson, speaking in soft southern accents, delivered a memorable address on television. What happened in Selma, he insisted, concerned all Americans, "who must overcome the crippling legacy of bigotry and injustice." Then, in a stirring adaptation of the anthem of the civil rights movement, the president concluded: "And we shall overcome." Following words with deeds, Johnson speedily shepherded through Congress the landmark Voting Rights Act of 1965, signed into law on August 6. It outlawed literacy tests and sent federal voter registrars into several southern states. Johnson later capped his legislative record on civil rights when he persuaded Congress in 1968 to pass the long-delayed Open Housing Bill, though the results were disappointing.

Black Rage

The Voting Rights Act of 1965 marked the end of an era in the troubled history of the black movement—the era of civil rights campaigns, focused on the South and led by peaceable moderates like Martin Luther King, Jr. Just five days after President Johnson signed the new voting law, a bloody riot exploded in Watts, a black ghetto in Los Angeles. Enraged blacks burned and looted their neighborhoods for nearly a week. When the smoke finally cleared, thirty-one blacks and three whites lay dead, more than a thousand persons had been injured, and hundreds of buildings stood charred and gutted.

Increasingly, violent voices began to be heard in the black movement, and its leadership divided dangerously between advocates of peaceful or militant tactics. Rising bitterness was highlighted by the career of Malcolm X, a brilliant Black Muslim preacher who favored black separatism and condemned the "blue-eyed white devils." In early 1965 he was cut down by black gunmen while speaking to a large crowd in New York City.

The moderation of Martin Luther King, Jr., came under heavy fire from younger black radicals in June 1966. King and Trinidad-born Stokely Carmichael of the Student Non-Violent Coordinating Committee (SNCC) vowed to resume a voter registration march through Mississippi, after its

originator, James Meredith, had been gunned down along a Mississippi highway. (He was the same black man who had gained entrance to the University of Mississippi in 1962.) Sharp disagreements almost immediately flared forth, as Carmichael urged giving up peaceful demonstrations and pursuing "Black Power."

The phrase, "Black Power," frightened many whites, and their fears deepened when Stokely Carmichael was quoted as saying that Black Power "will smash everything Western civilization has created." Levelheaded advocates of Black Power intended the slogan to describe a broad-front effort to *exercise* the political rights gained by the civil rights movement. But for a time Black Power seemed to be simply a justification for pillage and arson. City-shaking riots erupted in Newark, New Jersey, in the summer of 1967, taking twenty-five lives, and in Detroit, Michigan, where federal troops restored order after forty-three people had died in the streets. Black rioters blindly burned down their own neighborhoods, attacking not so much white people as the symbols of white domination. These symbols of white domination included the landlord's property, police officers, and even firefighters, who had to battle blacks chanting "Burn, baby, burn."

Riotous tactics angered white Americans, who now threatened to retaliate with their own "backlash" against ghetto arsonists and killers. Inner-city anarchy baffled many northerners, who had considered racial problems a purely "southern" question. But black concerns had moved North—as had nearly half the nation's black people. In the North the Black Power movement now focused less on civil rights and more on economic demands. Black unemployment, for example, was nearly double that for whites. These oppressive new problems seemed even less likely to be solved peaceably than the struggle for voting rights in the South.

Despair deepened when the magnetic and moderate voice of Martin Luther King, Jr., was forever silenced by a sniper's bullet in Memphis, Tennessee, on April 4, 1968. The killing of King cruelly robbed the American people of one of the most inspirational leaders in their history—at a time when they could least afford to lose him. This outrage triggered a nationwide orgy of ghetto-gutting and violence that cost over forty lives.

Rioters noisily made news, but thousands of other blacks quietly made history. Their voter registration in the South had shot upward, and by the late 1960s there were several hundred black elected officials in the Old South. Cleveland, Ohio, and Gary, Indiana, had elected black mayors. By 1972 nearly half of the southern black children sat in integrated classrooms. Actually, more schools in the South were integrated than in the North. About a third of black families had risen economically into the ranks of the middle class—though an equal proportion remained below the "poverty line." King left a shining legacy of racial progress, but he was cut down when the job was far from completed.

Combating Communism in Two Hemispheres

Violence at home eclipsed Johnson's legislative triumphs, while foreign flare-ups threatened his political life. Discontented Dominicans rose in revolt against their military government in April 1965. Johnson speedily announced that the Dominican Republic was the target of a Castrolike coup by "Communist conspirators," and he dispatched American troops, ultimately some twenty-five thousand, to protect American lives and restore order. But the evidence of a Communist takeover was fragmentary at best. Johnson was widely condemned, at home and in Latin America, for his temporary reversion to the officially abandoned "gunboat diplomacy." Critics charged that the two-fisted Texan was far too eager to back right-wing regimes with bayonets.

At about the same time, Johnson was floundering deeper into the monsoon mud of Vietnam. Viet Cong guerrillas attacked an American air base at Pleiku, South Vietnam, in February 1965. The president immediately ordered retaliatory bombing raids against military installations in North Vietnam and for the first time ordered attacking U.S. troops to land. By the middle of March 1965, the Americans had "Operation Rolling Thunder" in full swing—regular full-scale bombing attacks against North Vietnam. Before 1965 ended, some 184,000 American troops were involved, most of them slogging through the jungles and rice paddies of South Vietnam searching for guerrillas clad in black pajamas. When Barry Goldwater was asked what he would be doing differently in Vietnam if he were president, he replied that he would be doing the same thing—only "catching hell" for it. Many Americans complained that they had voted for Johnson but had got Goldwater.

Johnson had now taken the first fateful steps down a slippery path. He and his advisers believed that a fine-tuned, step-by-step increase in American force would drive the enemy to defeat with a minimum loss of life on both sides. But the president reckoned without due knowledge of the toughness, resiliency, and dedication of the local Viet Cong and their North Vietnamese allies. Aerial bombardment actually strengthened the Communists' will to resist. The enemy matched every increase in American firepower with more men and more wiliness in the art of guerrilla warfare.

The South Vietnamese themselves were meanwhile becoming spectators in their own war, as the fighting became increasingly Americanized. Corrupt and collapsible governments succeeded each other in Saigon with bewildering rapidity. Yet American officials continued to talk of defending a faithful democratic ally. Washington spokespersons also defended America's action as a test of Uncle Sam's "commitment" and of the reliability of his numerous treaty pledges to resist Communist encroachment. If the United States were to cut and run from Vietnam, claimed prowar "hawks," other nations would doubt America's word, crumble under Communist pressure, and drive America's first line of defense back to Waikiki Beach, in Hawaii, or even to the coast of California. Persuaded by such panicky thinking, Johnson steadily raised

the military stakes in Vietnam. By 1968 he had poured more than half a million troops into Southeast Asia, and the annual bill for the war was exceeding \$30 billion. Yet the end was nowhere in sight.

Vietnam Vexations

America could not defeat the enemy in Vietnam, but it seemed to be defeating itself. World opinion grew increasingly hostile; the blasting of an underdeveloped country by a mighty superpower struck many critics as obscene. Several nations expelled American Peace Corps volunteers. Disgusted European allies complained that they were being neglected militarily and punished economically, as America exported war-bred inflation to its trading partners. Haughty Charles de Gaulle, ever suspicious of American reliability, ordered NATO off French soil in 1966.

Overcommitment in Southeast Asia also tied America's hands elsewhere. Capitalizing on American distractions in the Orient, the Soviet Union expanded its influence in the Mediterranean area, especially in Egypt. Tiny Israel humiliated the Russian-backed Egyptians in a devastating Six-Day War in June 1967, but the Middle East remained a packed powder keg that the war-plagued United States could not defuse.

The United States proved equally helpless when the North Koreans seized a U.S. intelligence ship, the *Pueblo*, in January 1968, evidently in international waters. They imprisoned the crew of some eighty men for eleven months. This humiliating episode angered red blooded Americans, but it provoked no military response at a time when one Asiatic war was more than enough.

Domestic discontent also festered as the Vietnamese entanglement dragged on. Antiwar demonstrations had begun on a small scale with campus "teach-ins" in 1965, and gradually these protests mounted to tidal-wave proportions. As the long arm of the military draft dragged more and more young men off to the Asian slaughter pen, resistance stiffened. Thousands of draft registrants fled to Canada; others publicly burned their draft cards. Hundreds of thousands of marchers filled the streets of New York, San Francisco, and other cities, chanting "Hell no, we won't go," and "Hey, hey, LBJ, how many kids did you kill today?" Countless citizens felt the pinch of war-spawned inflation. Many Americans also felt pangs of conscience at the spectacle of their countrymen burning peasant huts and blistering civilians with ghastly napalm.

Opposition in Congress to the Vietnam involvement centered in the influential Senate Committee on Foreign Relations, headed by a former Rhodes scholar, Senator Fulbright of Arkansas. A constant thorn in the side of the president, he staged a series of widely viewed televised hearings in 1966 and 1967, during which prominent personages aired their views, largely antiwar. Gradually, the public came to feel that it had been lied to about the causes and "winnability" of the war. A yawning "credibility gap" opened between

the government and the people. New flocks of antiwar "doves" were hatching daily.

Even within the administration, doubts were deepening about the wisdom of the war in Vietnam. When Defense Secretary McNamara expressed increasing discomfiture at the course of events, he was quietly eased out of the cabinet. President Johnson did announce "bombing halts" in early 1966 and early 1967, supposedly to lure the enemy to the peace table. But Washington did not pursue its "peace offensive" with much energy, and the other side did not respond with encouragement. Both sides used the bombing pauses to funnel more troops into South Vietnam.

By early 1968 the brutal and futile struggle had become the longest and most unpopular foreign war in the nation's history. The government had failed utterly to explain to the people what was supposed to be at stake in Vietnam. Many critics wondered if any objective could be worth the vast price, in blood and treasure, that America was paying. Casualties, killed and wounded, already exceeded 100,000. More bombs had been dropped on Vietnam than on all enemy territory in World War II. Evidence mounted that America had been entrapped in an Asian civil war, fighting against highly motivated rebels who were striving to overthrow an oppressive regime. Yet Johnson clung to his basic strategy of stepping up the pressure bit by bit. He stubbornly assured doubting Americans that he could see "the light at the end of the tunnel." But to growing numbers of Americans, it seemed that Johnson was bent on "saving" Vietnam by destroying it.

Vietnam Topples Johnson

Hawkish illusions that the struggle was about to be won were shattered by a blistering Communist offensive launched in late January 1968, during Tet, the Vietnamese New Year. At a time when the Viet Cong were supposedly licking their wounds, they suddenly and simultaneously mounted savage attacks on twenty-seven key South Vietnamese cities, including the capital, Saigon. Although eventually beaten off with heavy losses, they demonstrated anew that victory could not be gained by Johnson's strategy of gradual escalation. The Tet offensive ended in a military defeat but a political victory for the Viet Cong. With an increasingly insistent voice, American public opinion demanded a speedy end to the war. Opposition grew so vehement that President Johnson could feel the very foundations of government shaking under his feet.

American military leaders responded to the Tet attacks with a request for 200,000 more troops. The largest single increment yet, this addition would have swollen American troop strength in Vietnam to about the three-quarter-million mark. The size of the request staggered many policymakers. Former Secretary of State Dean Acheson reportedly advised the president that "the Joint Chiefs of Staff don't know what they're talking about." Johnson him-

self now began to doubt seriously the wisdom of continuing on his raise-the-stakes course.

The president meanwhile was being sharply challenged from within his own party. Eugene McCarthy, a little-known Democratic senator from Minnesota, had emerged as a contender for the 1968 Democratic presidential nomination. The soft-spoken McCarthy, a sometime poet and devout Catholic, gathered a small army of antiwar college students as campaign workers. Going "clean for Gene," with shaven faces and shortened locks, these idealistic recruits of the "Children's Crusade" invaded the key presidential primary state of New Hampshire to ring doorbells. On March 12, 1968, their efforts gave McCarthy an incredible 42 percent of the Democratic votes and twenty of the twenty-four convention delegates. President Johnson was on the same ballot, but only as a write-in candidate. Four days later Senator Robert F. Kennedy of New York, the murdered president's younger brother and by now himself a "dove" on Vietnam, threw his hat into the ring. The charismatic Kennedy, heir to his fallen brother's mantle of leadership, stirred a passionate response among workers, blacks, Hispanics, and young people.

These startling events abroad and at home were not lost on LBJ. The country might explode in greater violence if he met the request of the generals for more troops. His own party was dangerously divided on the war issue. He might not even be able to win renomination after his relatively poor showing in New Hampshire. Yet he remained committed to victory in Vietnam. How could he salvage his blind-alley policy?

Johnson's answer came in a bombshell address on March 31, 1968. He announced on nationwide television that he would finally apply the brakes to the escalating war. He would freeze American troop levels and gradually shift more responsibility to the South Vietnamese themselves. Aerial bombardment of the enemy would be drastically scaled down. Then, in a dramatic plea to unify a dangerously divided nation, Johnson startled his vast audience by firmly declaring that he would not be a candidate for the presidency in 1968.

Johnson's "abdication" had the effect of preserving the military status quo. He had held the "hawks" in check, while offering himself as a sacrifice to the militant "doves." The United States could thus maintain the maximum *acceptable* level of military activity in Vietnam with one hand, while trying to negotiate a settlement with the other.

North Vietnam responded somewhat encouragingly three days later, when it expressed a willingness to talk about peace. After a month of haggling over the site, the adversaries agreed to meet in Paris. But progress was glacially slow, as prolonged bickering developed over the very shape of the conference table.

The Presidential Sweepstakes of 1968

Summer in 1968 was one of the hottest political seasons in the nation's history. Johnson's heir apparent for the Democratic nomination was his liberal vice-president, Hubert H. Humphrey, a former pharmacist, college teacher, mayor, and senator. Loyal support of LBJ's Vietnam policies through thick and thin, he received the support of the party apparatus, dominated as it was by the White House. Senators McCarthy and Kennedy meanwhile dueled in several state primaries, with Kennedy's bandwagon gathering ever-increasing speed. But on June 5, 1968, the night of an exciting victory in the California primary, Kennedy was shot to death by a young Arab immigrant resentful of the candidate's pro-Israeli views.

Surrounded by bitterness and frustration, the Democrats met in Chicago in late August 1968. Angry antiwar zealots, deprived by an assassin's bullet of their leading candidate, streamed menacingly into Chicago. Mayor Daley responded by arranging for barbed-wire barricades around the convention hall ("Fort Daley"), as well as thousands of police and National Guard reinforcements. Many demonstrators baited the officers in blue as "pigs." Other militants, chanting "Ho, Ho, Ho Chi Minh," shouted obscenities and hurled bags and cans of human filth at the police lines. As people the world over watched on television, the exasperated "peace officers" broke into a "police riot," clubbing and manhandling innocent and guilty alike. Acrid tear gas fumes hung heavy over the city and even drifted up to candidate Humphrey's hotel suite. Hundreds of people were arrested and scores hospitalized, but no one was killed—except, as cynics said, the Democratic party and its candidate.

Humphrey steamrolled to the nomination on the first ballot. The dovish McCarthyites failed even to secure an antiwar platform plank. Instead, the Humphrey forces, echoing the president, rammed through their own declaration that armed force would be relentlessly applied until the enemy showed more willingness to negotiate.

Scenting victory as the Democrats divided, the Republicans had jubilantly convened in plush Miami Beach, Florida, early in August 1968. Richard M. Nixon, the former vice-president whom John F. Kennedy had narrowly defeated eight years earlier, arose from his political grave to win the nomination. Nixon, with a "loser's image," was fighting history. Not since 1840 had a candidate won the presidency for a first term after a previous electoral defeat for that office. But Nixon had doggedly entered and won several Republican primaries. As a "hawk" on Vietnam and a right-leaning middle-of-the-roader on domestic policy, he could please the Goldwater conservatives and was acceptable to party moderates. He appealed to white Southern voters and to the "law and order" element when he tapped as his vice-presidential running mate Maryland's Governor Spiro T. Agnew, noted for his tough stands against blacks and dissidents. The Republican platform called for victory in Vietnam and a strong anticrime policy.

A "spoiler" third-party ticket—the American Independent party—added color and confusion to the campaign. It was headed by a scrappy ex-pugilist, George C. Wallace, former governor of Alabama. Wallace jabbed repeatedly at "pointy-headed bureaucrats," and he taunted hecklers as "bums" who needed a bath. Speaking behind a bullet-proof screen, he called for prodding the blacks into their place, with bayonets if necessary. He and his running mate, former air force General Curtis LeMay, also proposed smashing the North Vietnamese to smithereens by "bombing them back to the Stone Age."

Victory for Nixon

Vietnam proved a less crucial issue than expected. Between the positions of the Republicans and the Democrats, there was little to choose. Both candidates were committed to keeping on with the war until the enemy would settle for an "honorable peace," which seemed to mean an "American victory." The millions of "doves" had no place to roost, and many refused to vote at all. Humphrey, scorched by the LBJ brand, went down to defeat as a loyal prisoner of his chief's policies, despite Johnson's last-minute effort to bail him out by announcing a *total* bombing halt.

Nixon, who had lost a cliff-hanger to Kennedy in 1960, won one in 1968. He garnered 301 electoral votes, with 43.4 percent of the popular tally (31,785,480), as compared with 191 electoral votes and 42.7 percent of the popular votes (31,275,166) for Humphrey. Not since Woodrow Wilson in 1912 had the victor received so small a percentage. Nixon was also the first president-elect since 1848 not to bring in on his coattails at least one house of Congress for his party in an initial presidential election. He carried not a single major city, thus attesting to the continuing urban strength of the Democrats, who also won about 95 percent of the black vote. Nixon had received no clear mandate to do anything. He was a minority president who owed his election to divisions over the war and protest against the unfair draft, crime, and rioting.

Wallace did more poorly than expected. Yet he won an impressive 9,906,473 popular votes and 46 electoral votes, all from five states of the Deep South, four of which the Republican Goldwater had carried in 1964. Wallace remained a formidable force, for he had amassed the largest third-party popular vote in American history.

The Obituary of Lyndon Johnson

Talented but tragedy-struck Lyndon Johnson returned to his Texas ranch in January 1969 and died there four years later. His party was defeated, and his "me-too" Hubert Humphrey was repudiated. His popularity remained low in the opinion polls, although it had risen somewhat after his "great renunciation"—ironically one of his most popular acts.

Yet Johnson's legislative leadership for a time had been remarkable. No president since Lincoln had worked harder or done more for civil rights. None had shown more compassion for the poor, the ill educated, and the black. Johnson seemed to suffer from a kind of inferiority complex about his own arid cultural background, and he strove furiously to prove that he could be a great "people's president" in the image of his idol, Franklin Roosevelt. His legislative achievements in his first three years in office indeed invited comparison with those of the New Deal.

But by 1966 Johnson was already sinking into the Vietnam quicksands. The Republicans had made gains in Congress, and a white "backlash" had begun to form against the black movement. Great Society programs began to wither on the vine, as soaring war costs sucked tax dollars into the military machine. Johnson had promised both guns and butter but could not keep that promise. Ever-creeping inflation blighted the prospects of prosperity, and the War on Poverty met resistance that was as stubborn as the Viet Cong and eventually went down to defeat. Great want persisted alongside great wealth.

Johnson had crucified himself on the cross of Vietnam. The Asian quagmire engulfed his noblest intentions. Committed to some degree by his two predecessors, he had chosen to defend the American foothold and enlarge the conflict rather than be run out. He was evidently persuaded by his brightest advisers, both civilian and military, that a "cheap" victory was possible. It would be achieved by massive aerial bombing and large, though limited, troop commitments. His decision not to escalate the fighting further offended the "hawks," and his refusal to back off altogether antagonized the "doves." Like the Calvinists of colonial days, luckless Lyndon Johnson was damned if he did and damned if he did not.

Source: Adapted from T. Bailey and D. Kennedy, *The American Pageant*, 8th Ed., Chapter 43, pp. 859–880. Copyright © 1987 by D. C. Heath and Company.

Application Exercises

1. Preview the chapter. Try to see the "big picture." Although this chapter has numerous headings and subheadings, it basically focuses on the Kennedy and Johnson eras. Keep this idea in mind as you preview.
2. Formulate ten memory and five higher-level questions from your pre-viewing.
3. Read and annotate the chapter. Focus on keeping the information organized around the key ideas.

4. Using the following labels, organize the information from the chapter. Note that there might be some overlap. For example, “Tonkin Gulf” is a place, but there was also a “Tonkin Gulf” incident (event).

people

places

events

LBJ

JFK

Vietnam war

civil rights

5. Make two time lines that span the Kennedy and Johnson years. One time line should focus on the civil rights movement and the other on the Vietnam War.
6. Modify the questions you posed in Exercise 2. Add more questions if necessary. Use the question/answer format.

Selection from a Physical Science Text

Weather Forecasting

Humans have long desired to control the weather. However, little progress has been made toward achieving this desire; and as the next best thing, the preoccupation of observing and attempting to predict the weather developed. The influence of the weather on everyday activity has grown to the extent that this preoccupation has become the sole occupation of many modern meteorologists, who are known as weather forecasters.

Weather forecasters are much maligned. When the weather fails to follow the forecast, they are the targets of many unflattering remarks. Bad weather that spoils a planned outing is blamed on the forecaster's shortsightedness, if not on the forecaster. Although meteorologists are scapegoats, they do a commendable job and on the average are correct about 80 percent of the time.

Accurately predicting atmospheric behavior is a difficult task. Changes in the weather are governed by scientific principles. However, the atmosphere is complex and contains so many variables that meteorologists must combine empirical and scientific knowledge in making reasonable forecasts. Weather data are collected and processed by the most modern means. From the current weather conditions, future conditions are projected, according to established behavior patterns. This selection deals with a few of the many aspects of weather forecasting.

The National Weather Service

The United States **National Weather Service** (formerly the Weather Bureau) is the federal organization that provides national weather information. It forms part of the National Oceanic and Atmospheric Administration (**NOAA**—pronounced “Noah”), which was created within the U.S. Department of Commerce in 1970.*

The original U.S. Weather Bureau grew out of the Army Signal Corps, which maintained an early telegraph system that was used for weather reporting. It became a part of the Department of Agriculture in 1891 and then part of the Department of Commerce in 1940. The Bureau's early activities were primarily directed toward weather forecasting as an aid to agriculture. However,

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*Because the National Weather Service issues its surface weather reports using British units, this chapter presents weather statistics in British units first, followed by SI units, where appropriate, in parentheses.

the greatest impetus for its growth came with the development of aviation, for which up-to-date weather reports are vital. Today, the Weather Bureau is known as the National Weather Service, and its activities are concerned with every phase of the weather.

The nerve center of the National Weather Service is the **National Meteorological Center (NMC)** located just outside Washington, D.C., in Suitland, Maryland. It is the NMC that receives and processes raw data taken at numerous weather stations. Currently, complete weather observations are collected at 260 National Weather Service facilities by some 1,200 people. Also available are aircraft and radar reports, upper-air monitoring, and data from weather satellites.

The NMC analyzes and makes forecasts from the received data. Other central National Weather Service organizations deal with specialized conditions such as hurricanes, tornadoes, and severe storms. From these central organizations, data go to Forecast Offices, which have the responsibility for warnings and forecasts for states, or large portions of states, and assigned zones. State forecasts are issued twice daily for a time period up to 48 hours. An extended outlook, up to five days, is issued daily for these same areas. The forecast organizational structure is shown in Figure 23.1.

Weather Service Offices represent the third echelon of the forecast system. Local forecasts are adoptions of state forecasts. They are issued to meet local requirements and to provide general weather information to the public. The

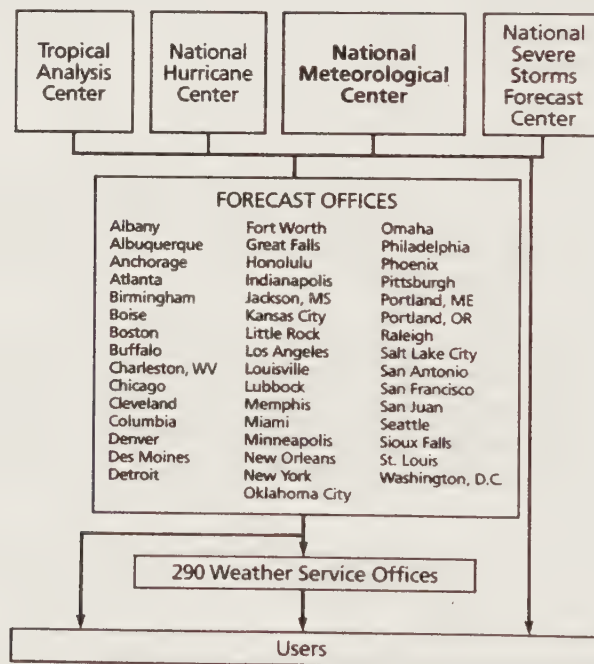


Figure 23.1 National Weather Service forecast organization

local forecasts are distributed by telephone services, and by radio and television broadcasts, including VHF-FM (very high frequency—frequency-modulated) radio stations near major population centers that transmit weather information continuously 24 hours a day, 365 days a year.

Let's take a closer look at how forecasts are made and distributed. The operations of the NMC are almost completely automated, and data are handled by high-speed computers, printers, and communication systems. Analyses are made twice daily at 0000 hours and 1200 hours Greenwich Mean Time (7 A.M. and 7 P.M. EST). A preliminary analysis is made after 1.5 hours of data reception. An operational analysis is made after 3.5 hours, when 80 percent of all incoming data have been received. The computer takes a half hour to analyze the information, and the analysis is completed before the data are 4 hours old. The NMC estimates the same analysis would take five people working 8 hours to complete. Manual analyses are made on certain portions of the data as a check on the computer.

Once the analyses are completed, three somewhat different simulations of the weather begin. The simulations use the basic laws of physics and some statistics to calculate values of temperature, wind, humidity, and rain at equally spaced locations over the entire globe and at a number of different altitudes. The results are sent out, almost untouched by human hands, to National Weather Service field offices and other users for guidance in making forecasts. Quality control is done in the field. The forecaster must estimate possible errors and use the results that appear to be best for his or her purpose, together with other knowledge, to make forecasts.

The distribution phase was once done by the teletype circuits that brought in the data. Facsimile circuits transmitted charts and 2,500 weather maps. However, the National Weather Service now uses a data-handling system known as AFOS (Automation of Field Operations and Services). The AFOS system uses minicomputers and TV-type displays in a network of more than 200 automated weather offices. The network has four loop circuits in different regions of the country and is centrally linked to the NMC.

The AFOS has done away with the older system of teletypewriters and facsimile machines and the enormous quantities of paper they generated. Instead, weather information from the minicomputer systems is displayed on video screens. However, the AFOS system is outdated and will be obsolete in a short time. It was not designed to take advantage of data from satellites and the relatively new Doppler radar, which is discussed later.

The National Weather Service will replace the AFOS system with specialized computer workstations called Automated Weather Information Processing Systems (AWIPS) in the 1990s. This computer system will allow forecasters to analyze quickly the most meaningful information from a diverse set of observations. Unlike AFOS, it will integrate large-scale weather data from the NMC satellite imagery and local radar coverage.

As a rule, the National Weather Service is dedicated to getting the weather information to the public by the fastest means available; however, there is an

exception. In wartime, weather data are of great military value and become classified information. During World War II, weather reports were not made public except in cases of severe weather, in which warnings were necessary to prevent property damage and loss of life. The news media were prohibited from mentioning anything that pertained to the weather. Farmers were simply told it would be a good day to make hay, or sports fans learned a rained-out ball game was called off due to conditions beyond control. As one sportscaster put it, "Well, folks, I can't say anything about the weather, but that isn't perspiration on the pitcher's face."

As technology increases and facilities expand, better weather forecasts become available. The predictions of the National Weather Service meteorologists are estimated to be about 80 percent accurate. This accuracy, of course, depends on the weather element and location. For example, predictions of no rain in parts of Arizona during the summer are almost 100 percent correct.

The method of reporting the weather has also changed over the years. In the past, forecasts of precipitation used terms such as *probable*, *likely*, and *occasional*. Precipitation forecasts are now expressed in "percentage probabilities," such as a 70 percent chance of rain. The percentage probability given in such a forecast results from a consideration of two quantities: (1) the probability that a precipitation-producing storm will develop in, or move into, the forecast area; and (2) the percentage of the area that the storm is expected to cover. Thus in summer when storms (because they are convectional) tend to be more isolated, or scattered, the probability that your immediate area will get rain tends to be less than in the winter when frontal storms are more prevalent. The percentage probabilities give the public a better indication of what the weather might be.

Although many hours of work go into making the daily weather forecasts as accurate as possible, they sometimes fail to hold true. But after all, if the forecasts were always correct, wouldn't it take a bit of the excitement out of life?

Data Collection and Weather Observation

In 1870 weather data in the United States were taken by the Army Signal Corps at 24 stations. Today, weather observations are collected from approximately 1,000 land stations, 6 fixed ocean stations, and several hundred merchant vessels of all nationalities. Many of the land stations are associated with airport operations. Volunteer observers also supply climatology data from about 12,000 substations around the country.

Weather stations are concerned with the basic meteorological measurements of temperature, pressure, humidity, precipitation, and wind direction and speed. The instruments used are also basically the same but have official specifications and, in some cases, may be automated to supply continuous readings.

A typical installation for data collection may include a hut used as an **instrument shelter** with louvered sides, a ventilated floor, and a double roof

with an air space between. This construction permits air measurements to be taken free from insolation influences. The instrument shelter may contain a maximum-minimum thermometer, a psychrometer, and a thermograph, which is an automatic temperature-recording device. Quite often these automated instruments are connected electronically to nearby offices.

A hydrothermograph is sometimes available and records the temperature as well as the relative humidity by hygrometric means, thus eliminating the need for the psychrometer. The relative humidity and temperature measurements are taken 6 ft above ground level. The maximum and minimum daily temperatures are important weather observations. They may be measured with a set of maximum-minimum thermometers.

The **maximum thermometer** is a mercury thermometer with a constriction in the lower part of its capillary bore (Figure 23.5a). The pressure of the expanding mercury in the bulb causes the mercury to pass through the constriction as the temperature increases. When the temperature decreases, the mercury is unable to pass back through the narrow constriction. Thus the column of mercury above the constriction indicates the highest temperature reached.

The maximum thermometer is reset by shaking. Shaking forces the mercury back into the bulb and readies the thermometer for a new reading. (Clinical thermometers are of similar construction and are maximum thermometers. A common error in taking one's temperature at home is forgetting to reset the thermometer.)

The **minimum thermometer** (Figure 23.5b) is an alcohol thermometer that contains a thin, colored-glass, dumbbell-shaped rod in its bore called the *index*. The surface tension of the alcohol surface draws the index to the lowest point of descent of the liquid column surface. When the temperature increases, the alcohol expands, and the liquid flows around the index,

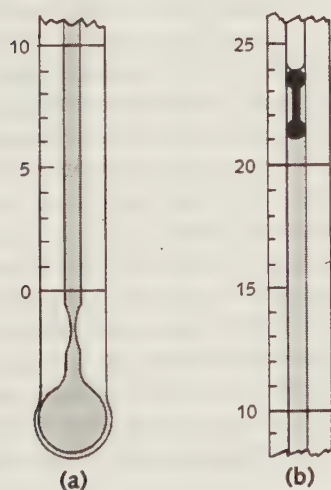


Figure 23.5 Maximum and minimum thermometers

(a) A constriction of the capillary bore prevents the mercury from returning to the bulb when the temperature decreases, so the thermometer retains its highest (maximum) reading. (b) Surface tension draws the index rod (black) to the lowest descent of the liquid column surface. When the temperature increases, the alcohol expands, and the liquid flows around the index, leaving it at the lowest (minimum) temperature.

and the alcohol expands, the liquid flows around the index, leaving it at the lowest position. Thus the upper end of the index marks the lowest or minimum temperature reached. In operation, the minimum thermometer is positioned horizontally. Positioned vertically, the glass index would fall through the liquid to the bottom of the tube. The thermometer is reset by tilting it downward.

Another type of maximum-minimum thermometer that gives both readings uses a U-tube with two liquids. The U-tube contains mercury in the bottom and a clear, expanding liquid above. There is a reservoir of this liquid at the top of the left side of the U-tube. As the temperature increases, the liquid inside expands and forces the mercury column *down* on the left side, and *up* on the right side, carrying with it the maximum index.

As the temperature decreases, the liquid contracts, causing the mercury column on the left side of the U-tube to rise and carry the minimum index with it. The maximum index remains at its highest graduation or maximum temperature, and the minimum index is carried to its lowest graduation or minimum temperature. The indexes, which are magnetic, are reset with a small ceramic magnet.

A **rain gauge** is an open container that automatically weighs and records the accumulated precipitation. The collection bucket of the rain gauge is mounted on a weighing mechanism having a scale that converts the weight of the rain to equivalent inches. The rain gauge is also used for snow measurements. The collection bucket is sprayed with special chemicals that melt the snow so its water equivalent can be measured.

Open exposure and immediate locale are not critical for barometric readings, as they are for the rain gauge, and barometers are usually kept indoors because of their intricate construction.

The National Weather Service has begun work on a new system of data collection. The Automatic Surface Observations Systems (ASOS) program is developing modular units that will be used to monitor weather conditions automatically. Modern technology will be used to acquire, process, and distribute the surface observations to various forecasting systems. Plans call for over 200 units to be deployed across the country in the 1990s.

Radar (*radio detecting and ranging*) is used to detect and monitor precipitation, especially that of severe storms. Radar operates by sending out electromagnetic waves and monitoring the returning waves that have been reflected back from some object. In this manner the location of the object may be determined. The objects of interest in weather observations are storms and precipitation. Continuous radar scans are now commonly seen on TV weather reports.

There are 230 conventional weather radars deployed across the United States. Installations are located mainly in the tornado belt of the midwestern United States and along the Atlantic and Gulf coasts where hurricanes are probable. Additional radar information is obtained from air traffic control systems at various airports. The NMC is linked to radar stations by telephone circuits, and its meteorologists can view the current radar scans across the country on television screens.

Following is a discussion of a relatively new type of radar now in use that helps forecasters to detect storms earlier than conventional radar. [Doppler Radar]

Upper-air observations are important in the collection of meteorological data. These observations are made chiefly with radiosondes (radio sounding equipment). A **radiosonde** is a small package of meteorological instruments combined with a radio transmitter. It is carried aloft by balloons, and data are transmitted to ground receiving stations. The wind direction and speed may also be obtained by tracking the flight of the radiosonde.

The carrier balloon eventually bursts, and the radiosonde descends slowly by means of a small parachute. Parachute descent prevents damage to the instruments and anything in the radiosonde's path on landing. Directions on the radiosonde request the finder to return the instruments to the National Weather Service, where they are reconditioned and flown again. Approximately 150 National Weather Service offices engage in radiosonde observations.

To get better wind information, a special-purpose Doppler radar called a wind profiler was developed. The profiler senses winds from about 1,600 ft to 55,000 ft (about 500 to 17,000 m) in altitude. By a comparison of radar beams, the profiler "profiles," or measures, upper-air wind directions and speeds. A demonstration network with 30 wind profilers is being installed in several Midwestern states.

Rockets are used in upper-atmosphere data collection, but probably the greatest progress in general weather observation has come with the advent of weather satellites. Before satellites, weather observations were unavailable for more than 80 percent of the globe. The first weather picture was sent back from space on April 1, 1960, from the 118-kg (260-lb) TIROS-1 (Television Infrared Observation Satellite). The first fully operational weather satellite system was in place by 1966. These early satellites traveled from pole to pole at altitudes of several hundred miles and monitored only a limited area below the orbital path. It took almost three orbits to photograph the entire conterminous United States.

Today, a fleet of GOESs (Geostationary Orbiting Environmental Satellite), which orbit at fixed points above the equator, and polar-orbiting satellites including a more recent 1040-kg TIROS, provide an almost continuous picture of weather patterns all over the globe. At an altitude of about 22,800 mi (36,800 km), the GOES orbiters have the same orbital period as that of Earth's rotation and hence are "stationary" over a particular location. At this altitude the GOESs can send back pictures of large portions of Earth's surface.

Geographic boundaries and longitude and latitude grids are prepared by a computer and electronically combined with the picture signal so the areas of particular weather disturbances can be easily identified.

With satellite photographs meteorologists have a panoramic view of the weather conditions. The dominant feature of the photograph is, of course, the cloud cover. However, with the aid of radar, which uses a wavelength that picks up only precipitation, the storm areas are easily differentiated from

regular cloud cover. Successive photographs of these storm centers give an indication of their movement, growth, and behavior, thus aiding weather forecasting.

Several improved GOES satellites (called GOES-NEXT) are planned to be put into orbit in the 1990s. Higher-resolution night sensors on board the GOES-NEXT satellites will aid forecasters in tracking dangerous storms not easily recognizable with current GOES imagery.

Another important feature of the satellite is **infrared measurements**. The energy and wavelength of emitted radiation depend on the temperature of the radiator. Objects with normal temperatures emit radiation energy in the infrared region of the spectrum. Hence using a spectrometer to determine the wavelength in this region provides a method of determining the temperature.

Normally, temperature measurements versus altitude are taken by conventional methods using radiosondes. However, infrared spectrometers now permit these measurements to be taken from lower-altitude, polar-orbiting satellites. This method offers a great advantage, because satellites can cover all areas of Earth, some of which have never been monitored by radiosonde because of their inaccessibility. This represents a major step in making the meteorologists' global weather picture more complete.

Developmental work is being done on a thermodynamic profiler called a Radio Acoustic Sounding System (RASS). This system uses sound waves to measure air temperature to a height of about 19,000 ft (5,800 m). The speed of sound in air depends on the air temperature. The RASS is to be used in conjunction with the Doppler radar wind profiler. The enhanced radar picks up the sound reflections while measuring wind speed and direction.

One of the more recent down-to-earth atmospheric observations is the **air pollution potential**. The pollution problem becomes severe when certain atmospheric conditions prohibit the dispersal of pollutants. Using upper-air observations, the NMC prepares wind and air-current data that are analyzed for potential pollution conditions. Advisory forecasts are issued to areas in which stagnation conditions are expected to persist for at least 36 hours. The air pollution potential provides an opportunity for pollution control and research, particularly in studying the influence of meteorological factors on the pollution conditions observed.

Another increasingly common atmospheric observation not related to weather forecasting is the pollen count. The count is made by health officials and is issued to give hay fever sufferers an indication of the amount of airborne pollen, which can aggravate their condition.

Folklore and the Weather

Folklore and legends have been associated with the weather since the beginning of humanity. People in early civilizations worshipped deities whose ac-

tions were manifested by weather phenomena. Myths were created to account for those occurrences that could not be otherwise explained. In Norse mythology, for example, thunder and lightning indicated the presence of the violent god Thor. Clouds were the cattle of the Greek sun god Apollo, grazing in the meadows of heaven.

Men judge by the complexion of the sky
The state and inclination of the day.

—*Shakespeare, Richard II*

As knowledge progressed and people gave up the mythological interpretations of weather, they began associating its behavior with observed phenomena. In this manner a similar observation might allow prediction of future weather conditions. It is these observations that have come down to us as folklore. Usually in the forms of sayings or verse, they have been handed down by word of mouth from generation to generation and often appear in literature.

Some of these sayings are well founded and can be explained scientifically. Others, seemingly without any valid explanation, live on, much the same as superstitions. A few of these well-known sayings are examined in this section. Those related to meteorological explanations will be pointed out. The others are left to the reader's imagination.

Many amateur weather forecasters closely observe the activities of birds and animals. The antics and instincts of these creatures often seem without explanation. However, they form an essential part of folklore. Ducks flapping their wings, the braying of donkeys, and the bolting of horses, for example, are thought by some to be indicative of stormy weather. Loggers in the Pacific Northwest are said to predict snow two or three days before a blizzard by watching elk gather in the shelter of trees. Fiddler crabs have been observed to retreat to inland burrows days before a hurricane's arrival.

Other observations are of a seasonal nature. Marks on a caterpillar and the amount of food stored by squirrels are used to predict the severity of the coming winter. The southward flight of birds may indicate an early winter, whereas wild geese flying north is taken as a sure sign that warm weather is coming soon. In California, the swallows come back to Capistrano on the same day each year.

Probably the most celebrated weather-predicting animal is the groundhog. Legend has it that the groundhog emerges from his winter hibernation each year on February 2 to check on the approach of spring. If he sees his shadow, he returns to his burrow, indicating that six more weeks of winter can be expected. This bit of folklore is greatly publicized each year by the town of Punxsutawney, Pennsylvania, where the local groundhog, "Punxsutawney Phil," is said to be the superior forecaster. It is somewhat surprising that his shadow, which occurs when the Sun is shining, should warn the groundhog of continuing winter, but that's the legend.

More dependable observations result from the sun and its effects.

Above the rest, the sun who never lies
Foretells the change of weather in the skies.

—*Virgil*

There are several sayings about the sun and the weather indications it gives.
Among them are the following:

The weary sun hath made a golden set
And by the bright tracks of his fiery car
Gives token of a goodly tomorrow.

—*Shakespeare, Richard II*

If the red sun begins his race
Be sure the rain will fall apace.

The Pharisees also with the Sadducees came, and tempting desired him that he would shew them a sign from heaven. He answered and said unto them, When it is evening, ye say, It will be fair weather: for the sky is red. And in the morning, It will be foul weather today: for the sky is red and lowring. Oh ye hypocrites, ye can discern the face of the sky; but can ye not discern the signs of the times?

—*Matthew 16:1–4*

The weather predictions alluded to in the Bible are more commonly stated:

Red sky at night, sailors delight;
Red sky in the morning, sailors take warning.

“Rainbow” is often substituted for “red sky” in the above saying. All these sayings involve the red sky, which we often see at sunrise and sunset. What then causes the sun and sky to appear red? When the sun is on the horizon, the sunlight travels farther through the atmosphere to reach us than when it is overhead. The blue portion of the sunlight is normally scattered. However, if the air contains impurities such as dust, more of the longer wavelengths are scattered as the sunlight travels near the surface of Earth, with the result that only the red portion of the spectrum may reach an observer. This, of course, makes the sky and sun appear red.

The condition is enhanced if a stable high-pressure region is between the observer and the Sun, as the high pressure holds air contaminants near Earth and scattering is increased. Highs are generally associated with good weather, so

if one sees a red sky in the evening, it is quite probable that there is a high-pressure area to the west, and good weather will accompany it as it moves eastward, delighting sailors in the westerly wind zone where this weather movement applies. Should the red sky occur at sunrise in the east, the high has probably passed and will usually be followed by a low-pressure system, which is generally associated with poor weather.

Another belief describing an observed phenomenon of sunlight is as follows:

When the sun draws water, rain will follow.

The sun's rays are often blocked by dense clouds. Occasionally, a cloud may be thin enough in a small area to show sunlight, or a small break in the clouds may allow the sunlight to shine through. In the humid air associated with the clouds, sunlight may be scattered by fine water droplets or other particles, giving rise to diffuse reflection and creating the effect of a fanlike ray of sunlight extending from Earth to the cloud.

This effect also may be observed when sunlight shines through dense leaf coverage in a thickly wooded area or in a flashlight or searchlight beam at night. No drawing up of water occurs, but clouds and particles *are* available for the production of rain.

Mackerel sky and mare's tails
Make lofty ships carry low sails.

Trace in the sky the painter's brush
The winds around you soon will rush.

The cirrus and cirrocumulus clouds referred to usually precede the approach of a warm front. As the front approaches, the warm air rising over the cold air mass is likely to produce the winds predicted by these verses.

The wind in the West
Suits everyone best.

In general, our good weather comes from the west, as opposed to north and east, so the saying is to some degree valid. Remember, however, that some locations on Earth receive very poor weather from the west. Hence the saying is not universal.

When the morn is dry
The rain is nigh
When the morn is wet
No rain you get.

Or in different form and meter:

When the grass is dry at morning light
Look for rain before the night;
When the dew is on the grass
Rain will never come to pass.

The reasoning behind these rhymes is obvious. If condensation in the form of dew has occurred, the air will have a lower relative humidity, and rain will be unlikely. However, a better last line to the second poem might read "Rain will *seldom* come to pass," as the air at higher elevations may have sufficient moisture to produce rain. Also, the lack of dew in the morning is not a positive indication of rain. The general validity of these sayings is therefore questionable.

The moon also shares considerable prominence in weather folklore. Many sayings related to it are unfounded; among these, the indication of rain when "the new moon holds the old moon in its arms." This refers to the time when the crescent new moon is near the lower portion of the moon and appears to hold the upper darkened portion. The rain supposedly results from water being spilled from the saucer-shaped new moon. Such sayings are best answered by this countersaying:

Moon and weather may change together
But a change of the moon does not change the weather.

More reasonable predictions are given by the following:

Clear moon, frost soon.

A ring around the moon is a sure sign of rain.

When the stars begin to huddle
The Earth will soon become a puddle.

The first of these sayings refers to the lack of cloud cover that acts like an insulation to keep Earth warm. In the absence of clouds, the moon is clearly seen and the land masses cool quickly, making frost likely. The last two sayings refer to the appearance of the moon and stars as viewed through cirrostratus clouds. The moon appears with a diffuse halo, whereas the indistinct stars appear to be closer together. Cirrostratus clouds normally precede an approaching warm front, which is accompanied by turbulent weather, usually in the form of rain.

Although not directly related to meteorology, the moon and its phases are often referred to for planting crops. Many gardeners follow the *Farmer's Almanac*, which gives the periods of the proper phases of the moon for planting particular crops. In general, crops that produce above ground are to be planted in the "light of the moon," or in the waxing phase. Those that produce below the surface are to be planted in the "dark of the moon," or in the waning phase.

For example, it was reported that a certain gardener had difficulty in keeping dirt on potatoes that were planted in the light of the moon.

Wood is also said to be affected by the phases of the moon. A board lying on the ground will supposedly curl up at the ends in the light of the moon and stick firmly to the ground in the dark of the moon. Whether this is true is subject to doubt, but some builders will put on wooden shingles only during the waning phase or dark of the moon.

Other weather sayings include the following:

Sound travelling far and wide
A stormy day will betide.

Sound waves may be reflected by air layers of different temperatures in the atmosphere. As a result, the sound is heard at a considerable distance, where it is reflected back to Earth. A reflecting cold air layer may also be the source of precipitation, accounting for the stormy day.

Rain before seven stops before eleven.

This is a reasonably safe prediction for convectional precipitation. If it were raining prior to 7 A.M., little moisture would probably be left in the precipitating cloud by 11 A.M. Moreover, the sun would be rising high in the sky and cause the temperature to rise above the dew point temperature. The clouds would then dissipate and the rain cease, which would bear out the prediction. However, for frontal precipitation, which is controlled by huge air masses, the prediction may not prove to be so accurate.

Leaves turn silver before a rain.

When the wind blows the leaves so that the shiny underside is exposed, they take on a silvery appearance. This turning up of the leaves may result from vertical air motion, which may cause cloud formation. If a nimbus cloud develops, the leaves' prediction of rain will be fulfilled.

It smells like rain.

Before a rain there may be a musty, or earthy, smell in the air. Because convectional precipitation is associated with low pressure and rising air, air and gases in the ground may diffuse out, giving rise to the "smell of rain."

Snow on the ground for three days is waiting for another.

If snow remains on the ground for three days, it is obviously quite cold and additional precipitation is likely to be in the form of snow.

Several common sayings that are without scientific foundation are:

Rain on the first Sunday,
rain every Sunday [of the month].

Rain on Easter Sunday,
rain for seven straight Sundays.

Rain on Good Friday,
the Saint is pouring water on a flat rock.

The last demonstrates how the meanings of folklore sayings may be disguised. Its interpretation is that if it rains on Good Friday, the following summer will be dry, such that the rains will run off the hard, dry ground as though it were a rock.

Another special day for rain is St. Swithin's Day, July 15. If it rains on St. Swithin's Day, the ancient legend says, 40 days of rain will follow. St. Swithin was an English bishop whose wish it was to be buried in the open churchyard. When sainted and moved into the church, his spirit protested with 40 days of rain. A rain occurring on the anniversary of this event will supposedly arouse St. Swithin's spirit for a repeat performance.

Certain weather occurrences are given special names. A period of warm weather in October or November is sometimes referred to as **Indian Summer**. The seasonal cooling at this time of year gives rise to low-lying fogs. It is said that thin fogs lying near the tops of corn shocks reminded the early settlers of smoke coming from Indian teepees, hence the name Indian Summer. There is nothing uncommon about a brief warm "spell" this late in the year, as the season changes from autumn to winter.

The special significance of this period of warm weather is no doubt largely psychological. People are aware of the coming harsh winter and are sentimental toward this last warm reminder of the pleasant summer. The fondness for summer prompts a special name for this last trace. A wintry period in April is not so honored as Indian Winter but is deplored and quickly forgotten. More significance is given to the break in winter called the January thaw, which often occurs in February. A cold snap during the first few days of spring, when blackberries usually bloom, is sometimes called Blackberry Winter.

Some people are able to forecast a change in the weather or rain by an ache in the knee or some other joint. This ability was thought to be a joke for some time; however, it is now believed that changes in the pressure and humidity affect the aches and pains of rheumatic joints. Others, who are not afflicted, may rely on folklore to help predict weather behavior. The date of the first snow is sometimes taken as the number of snows that will occur during the winter. As the number of snows approaches the predicted number, those who believe in this prediction become very discriminating between an actual snow and a non-countable flurry.

Folklore, whether true or unfounded, will exist as long as people talk about the weather, and weather is one of our most talked-about subjects. When we are without anything to say or at a loss for words, it is a favorite topic that

comes to our aid. Everyone comments on the weather, and an old English proverb observes:

Weather is the discourse of fools.

Learning Objectives

After studying this chapter, you should be able to do the following without referring to the text:

1. Describe the organization and functions of the National Weather Service.
2. Explain how weather data are processed and how forecasts are distributed.
3. State the instruments, their operation, and the data collected in a typical weather station.
4. Describe the operation and data collected by radar, radiosondes, and weather satellites.
5. Distinguish between folklore sayings with scientific merit and those without.
6. Define and explain the important terms listed in the next section.

Important Terms

National Weather Service	rain gauge
NOAA	radar
National Meteorological Center	Doppler radar
instrument shelter	radiosonde
maximum thermometer	Indian Summer
minimum thermometer	

Questions

The National Weather Service

1. What is NOAA?
2. Has the United States always had a National Weather Service or a similar organization?
3. How are weather data processed and forecasts made? How often are forecasts made?
4. What are the locations of the Forecast Office and the Office of the National Weather Service nearest your hometown? your college or university?

Data Collection and Weather Observation

5. What type of data are taken at a typical weather data station?
6. Explain the operation of a maximum-minimum thermometer.

7. What does the word *radar* mean?
8. What is a radiosonde?
9. How are temperature profiles obtained by satellite?
10. What is a GOES, and why is it “stationary”?
11. What regions of the United States have high air pollution potential?

Folklore and the Weather

12. Are folklore sayings concerning the weather reliable? Do they have any scientific merit?
13. How do folklore sayings originate?
14. What are some of the major elements of observation in folklore sayings?

Thought Questions

1. Discuss how weather maps for the South American countries of (a) Brazil and (b) Argentina would be used to make weather forecasts (i.e., weather movements, and so on).
2. What do you think about folklore weather predictions? For example, do the actions of some animals and birds provide reasonable predictions?

Exercises

Folklore and the Weather

1. Examine the following weather sayings and explain their meteorological merit and meaning, if any.
 - (a) A red sun has water in his eye.
 - (b) Two full moons in a calendar month bring on a flood.
 - (c) Mackerel clouds in the sky, expect more wet than dry.
 - (d) February rain is only good to fill ditches.
 - (e) Candles burn dim before rain.
 - (f) March comes in like a lion and goes out like a lamb.
 - (g) A year of snow, a year of plenty.
 - (h) Dew long on the ground, Jack Frost will be around.
 - (i) It's too cold to snow.
2. Examine the following sayings and discuss if they have scientific merit.
 - (a) It will be a bad winter if squirrels' tails grow bushier.
 - (b) For every frost or fog in August, there will be a snowy day in winter.

- (c) The number of days old the moon is at the first snow tells how many snows there will be that winter.
- (d) If it's cloudy and smoke rises, there's a chance of snow.
- (e) It will rain if smoke goes to the ground.
- (f) A long, hot summer means a long, cold winter—the hotter the summer, the colder the winter.

Vocabulary Exercises

Important Words and Terms

preoccupation 335	psychrometer 339
empirical 335	thermograph 339
National Weather Service 335	hydrothermograph 339
impetus 335	maximum thermometer 339
echelon 336	minimum thermometer 339
teletypewriters 337	graduation 340
precipitation 338	rain gauge 340
percentage probabilities 338	radar 340
convictional 338	radiosonde 341
climatology 338	wind profiler 341
substations 338	panoramic 341
instrument shelter 338	infrared measurements 342

Directions: Find each term and read the sentence or paragraph in which it occurs. If the context makes the definition of the word clear, check Yes, and write a definition from the context. If the meaning is not clear from the context, check No, and use a dictionary to find a definition that matches the one the author uses. Some of the words are also followed by a line labeled "Structure." For these terms, describe how the structure of each term relates to its meaning. Use the dictionary to describe the word parts and their meanings if you don't already know them.

1. preoccupation

___ Yes ___ No _____

Structure: _____

2. empirical

___ Yes ___ No _____

3. National Weather Service

☐ Yes ☐ No _____

4. impetus

☐ Yes ☐ No _____

5. echelon

☐ Yes ☐ No _____

6. teletypewriters

☐ Yes ☐ No _____

Structure: _____

7. precipitation

☐ Yes ☐ No _____

8. percentage probabilities

☐ Yes ☐ No _____

9. convectional

☐ Yes ☐ No _____

Structure: _____

10. climatology

☐ Yes ☐ No _____

11. substations

☐ Yes ☐ No _____

Structure: _____

12. instrument shelter

☐ Yes ☐ No _____

13. psychrometer

☐ Yes ☐ No _____

Structure: _____

14. thermograph

☐ Yes ☐ No _____

Structure: _____

15. hydrothermograph

☐ Yes ☐ No _____

Structure: _____

16. maximum thermometer

☐ Yes ☐ No _____

17. minimum thermometer

☐ Yes ☐ No _____

18. graduation

☐ Yes ☐ No _____

19. rain gauge

☐ Yes ☐ No _____

20. radar

☐ Yes ☐ No _____

21. radiosonde

☐ Yes ☐ No _____

22. wind profiler

☐ Yes ☐ No _____

23. panoramic

____ Yes ____ No _____

Structure: _____

24. infrared measurements

____ Yes ____ No _____

Abbreviations

This selection uses several abbreviations for agencies or for equipment. It is likely you will see these abbreviations on tests or hear them in lectures, so it is important that you know what they stand for.

Directions: For each abbreviation, first tell what the letters stand for (e.g., “NWS” stands for “National Weather Service.”) Then describe the agency or equipment.

1. NOAA (335)

NOAA stands for: _____

Describe NOAA: _____

2. NMC (336)

NMC stands for: _____

Describe NMC: _____

3. VHF-FM (337)

VHF-FM stands for: _____

Describe VHF-FM: _____

4. AFOS (337)

AFOS stands for: _____

Describe AFOS: _____

5. TIROS (341)

TIROS stands for: _____

Describe TIROS: _____

6. GOES (341)

GOES stands for: _____

Describe GOES: _____

7. RASS (342)

RASS stands for: _____

Describe RASS: _____

Application Exercises

1. Engage in Before Reading Activities. First, activate your prior knowledge about the weather and weather forecasting. Then, preview the selection. What are the key concepts? How is the information organized? How does the first half of the selection (about the National Weather Service and data collection) differ from the second half (about folklore)? Will you use different reading and studying strategies for the two parts? Make a reading/studying schedule for this chapter, taking into account the differences in the two parts of the chapter. Decide how much you will read at one time and what rehearsal strategies you will use to learn and remember the material.
2. From your preview, make a skeletal map of the key concepts in the first half of the chapter (including the sections on the National Weather Service and Data Collection and Weather Observation). Your map should show the relationships among the major ideas.
3. Study Figure 23.1 on page 336. This is a map, like ones we discussed in Chapter 10, of the many organizations that help to forecast the weather. As you read about these organizations, use this map to help understand and remember the organizations.
4. Identify at least fifteen terms that are related to the key information in the chapter and that you need to learn (you can refer to the list in the Vocabulary Exercise). Put these terms on concept cards using the format outlined in Chapter 10.
5. Construct at least twenty questions and answers. Use the format discussed in Chapter 8, and make sure that some of your questions are of a higher-level nature and require critical thinking.
6. Using PLAE, devise a study plan that you could use to study for a test on this selection.

GROUP DYNAMICS and **TEAMWORK**

CHAPTER OBJECTIVES

When you finish studying this chapter, you should be able to

- 1** Define the term *group*.
- 2** Explain the significance of cohesiveness, roles, norms, and ostracism in regard to the behavior of group members.
- 3** Identify and briefly describe the six stages of group development.
- 4** Define organizational politics and summarize relevant research insights.
- 5** Explain how groupthink can lead to blind conformity.
- 6** Define and discuss the management of virtual teams.
- 7** Discuss the criteria and determinants of team effectiveness.
- 8** Explain why trust is a key ingredient of teamwork and discuss what management can do to build trust.

**"IT TAKES TIME, EFFORT, AND
CONSIDERABLE RESOURCES TO BUILD
AND MAINTAIN UNCONDITIONAL TRUST."**

Lear Team Takes Quality Problems Personally

A chance conversation over lunch launched one of the biggest cost-saving accomplishments at Lear's auto supplier plant . . . [in Strasburg, Virginia].

A nine-member team of workers, the Eliminators, had been looking for ways to reduce the number of parts rejected for poor paint quality.

The plant builds interior parts for General Motors, Ford Motor, Chrysler, and Nissan vehicles. Specifically, the Eliminators sought to improve the performance of the No. 2 paint line, where workers paint about 3.5 million door-pulls a year.

The problem: how to keep water that catches paint-gun overspray from leaving spots on parts.

Too many spots and the part must be repainted or rejected. Lear was repainting more than 35,000 parts a year.

Different paint nozzles, brighter lights, employee training, and other potential solutions helped, but none solved the problem.

To visualize the problem, imagine a worker standing in front of a moving rack of parts that looks similar to the overhead clothes rack found in most dry cleaners. The worker uses a paint gun to blast each part with paint.

Behind the rack is a waterfall. The water catches the overspray from the paint gun, keeping potentially harmful fumes from entering the atmosphere. But after months of research, meetings, and frustration, the team was hitting a dead end. Then one day during a lunch break, team members asked paint technician Rick Edge, who worked on another paint line, whether he had similar problems.

"I said no," Edge says. "I don't have a waterfall."

Edge's paint line, which handles armrests in a building across the street from the No. 2 paint line—uses vacuum air to suck the overspray onto a cardboardlike filter that is



burned. Nancy Lloyd, the former continuous improvement coordinator for Lear, says it's common in a high-output, just-in-time production plant for workers not to communicate with others outside their work areas. "That's where the cross-functional team really helped us to bring people from different departments together."

The Eliminators began calling vendors, visiting other paint plants, and analyzing costs, savings, potential benefits, and the environmental impact of eliminating the waterfall.

After a few glitches (initially, the air filters clogged every hour), the team came up with a plan that lowered the plant's scrap rate by 16 percent and defects by 25 percent while improving productivity by 33 percent and saving Lear \$112,000 this year.

The successful solution won the team the 1999 RIT/USA Today Quality Cup for manufacturing.

"What I thought was unusual, (Lear) allowed the team players to call up suppliers to get price quotes," says Chuck Blevins, a quality cup judge and CEO of his own company.

"And the team players were determined not to waste any of the company's money, like it was their personal company."

Source: Earl Eldridge, "After Spotting Paint Glitch, Lear Workers Eliminate It," *USA Today*, (May 7, 1999): 6B. Copyright 1999, USA Today. Reprinted with permission.

As in daily life itself, relationships rule in modern organizations. The more managers know about building and sustaining good working relationships, the better. A management consultant recently put it this way:

At the end of the day, a company's only sustainable competitive advantage is its relationships with customers, business partners, and employees. After all, we provide products and services to people, not to companies. A commitment to developing effective relationships strengthens the fabric of the organization in the long run.¹

At Lear, effective working relationships both within the Eliminators team and between teams created a winning formula for the company, its employees, and its customers. The purpose of this chapter is to build a foundation of understanding in regard to how groups and teams function in today's organizations.

Fundamental Group Dynamics

According to one organization theorist, "All groups may be collections of individuals, but all collections of individuals are not groups."² This observation is more than a play on words; mere togetherness does not automatically create a group. Consider, for example, this situation. A half-dozen people who worked for different companies in the same building often shared the same elevator in the morning. As time passed, they introduced themselves and exchanged pleasantries. Eventually, four of the elevator riders discovered that they all lived in the same suburb. Arrangements for a car pool were made, and they began to take turns picking up and delivering one another. A group technically came into existence only when the car pool was formed. To understand why this is so, we must examine the definition of the term *group*.

What Is a Group?

From a sociological perspective, a **group** can be defined as two or more freely interacting individuals who share a common identity and purpose.³ Careful analysis of this definition reveals four important dimensions (see Figure 14.1). First, a group must be made up of two or more people if it is to be considered a social unit. Second, the individuals must freely interact in some manner. An organization may qualify as a sociological group if it is small and personal enough to permit all its members to interact regularly with each other. Generally, however, larger organizations with bureaucratic tendencies are made up of many overlapping groups. Third, the interacting individuals must share a common identity. Each must recognize himself or herself as a member of the group. Fourth, interacting individuals who have a common identity must also have a common purpose. That is, there must be at least a rough consensus on why the group exists.

1 Define the term *group*.

group two or more freely interacting individuals with a common identity and purpose

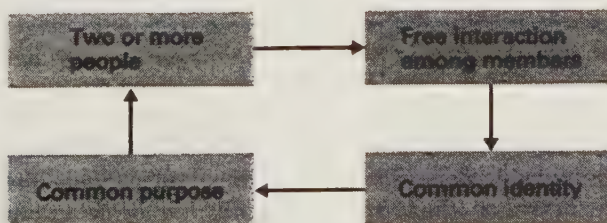


Figure 14.1

What Does It Take to Make a Group?



An Uphill Battle?

14A

Max De Pree, former CEO of Herman Miller, the Michigan office furniture maker:

In our group activities, intimacy is betrayed by such things as politics, short-term measurements, arrogance, superficiality, and an orientation toward self rather than toward the good of the group.

Source: Max De Pree, *Leadership Is an Art* (New York: Dell, 1989), p. 56.

Questions: Which of the various barriers to effective group action mentioned by De Pree is the **most** difficult for managers to overcome? Why? Is De Pree being too negative, or just being realistic? Explain.

For further information about the interactive annotations in this chapter, visit our Web site (www.hmco.com/college).

informal group collection of people seeking friendship

satisfy esteem needs because one develops a better self-image when accepted, recognized, and liked by others. Sometimes, as in the case of a group of friends forming a service club, an informal group may evolve into a formal one.

Managers cannot afford to ignore informal groups because grassroots social networks can either advance or threaten the organization's mission.⁵ As experts on the subject explained:

These informal networks can cut through formal reporting procedures to jump-start stalled initiatives and meet extraordinary deadlines. But informal networks can just as easily sabotage companies' best-laid plans by blocking communication and fomenting opposition to change unless managers know how to identify and direct them. . . .

If the formal organization is the skeleton of a company, the informal is the central nervous system driving the collective thought processes, actions, and reactions of its business units. Designed to facilitate standard modes of production, the formal organization is set up to handle easily anticipated problems. But when unexpected problems arise, the informal organization kicks in. Its complex web of social ties form[s] every time colleagues communicate and solidif[ies] over time into surprisingly stable networks. Highly adaptive, informal networks move diagonally and elliptically, skipping entire functions to get work done.⁶

formal group collection of people created to do something productive

Formal Groups. A **formal group** is a group created for the purpose of doing productive work. It may be called a team, a committee, or simply a work group. Whatever its name, a formal group is usually formed for the purpose of contributing to the success of a larger organization. Formal groups tend to be more rationally structured and less fluid than informal groups. Rather than joining formal task groups, people are assigned to them according to their talents and the organization's needs. One person normally is granted formal leadership responsibility to ensure that the members carry out their assigned duties. Informal friendship groups, in contrast, generally do not have officially appointed leaders, although informal leaders often emerge by popular demand.⁷ For the individual, the formal group and an informal group at the place of employment may or may not overlap. In other words, one may or may not be friends with one's coworkers.

Types of Groups

Human beings belong to groups for many different reasons. Some people join a group as an end in itself. For example, an accountant may enjoy the socializing that is part of belonging to a group at a local health club. That same accountant's membership in a work group is a means to a professional end. Both the exercise group and the work group satisfy the sociological definition of a group, but they fulfill very different needs. The former is an informal group, and the latter is a formal group.

Informal Groups. As Abraham Maslow pointed out, a feeling of belonging is a powerful motivator. People generally have a great need to fit in, to be liked, to be one of the gang. Whether the group meets at work or during leisure time, it is still an **informal group** if the principal reason for belonging is friendship.⁴ Informal groups usually evolve spontaneously. They serve to



The line between formal and informal groups can blur when you're working long hours on a project with a looming deadline. Here at a tropical camp in Peru—where the Andes Mountains give way to the Amazon River—botanist Bruce Holst, mammalogist Louise Emmons, and ornithologist Tom Schulenberg document their findings. With the help of their Peruvian colleagues, this team from the Rapid Assessment Program of Conservation International recently spent a month surveying the endangered rain forest.

Attraction to Groups

What attracts a person to one group but not to another? And why do some groups' members stay whereas others leave? Managers who can answer these questions can take steps to motivate others to join and remain members of a formal work group. Individual commitment to either an informal or formal group hinges on two factors. The first is **attractiveness**, the outside-looking-in view.⁸ A nonmember will want to join a group that is attractive and will shy away from a group that is unattractive. The second factor is **cohesiveness**, the tendency of group members to follow the group and resist outside influences. This is the inside-looking-out view. In a highly cohesive group, individual members tend to see themselves as "we" rather than "I." Cohesive group members stick together.⁹

Factors that either enhance or destroy group attractiveness and cohesiveness are listed in Table 14.1. It is important to note that each factor is a matter of degree. For example, a group may offer the individual little, moderate, or great opportunity for prestige and status. Similarly, group demands on the individual may range from somewhat disagreeable to highly disagreeable. What all this means is that both the decision to join a group and the decision to continue being a member depend on a net balance of the factors in Table 14.1. Naturally, the resulting balance is colored by one's perception and frame of reference, as it was in the case of Richard Dale, a former manager of distribution at Commodore International, during his first meeting with the company's founder, Jack Tramiel:

Dale's first meeting with Tramiel began with a summons to appear at Tramiel's office. Dale flew from his office in Los Angeles to Santa Clara . . . , only to find that Tramiel had decided to visit him instead.

Terrified, Dale caught a plane back to find his secretary shaking in her shoes and the burly Tramiel sitting at his desk. For an hour Tramiel grilled Dale on his philosophy of business, pronounced it all wrong, and suggested a tour of the warehouse. When they passed boxes of . . . [computers] waiting for shipment, recalls Dale, Tramiel seemed to "go crazy," pounding the boxes with his fists and yelling, "Do you think this is bourbon? Do you think it gets better with age?"¹⁰

2 Explain the significance of cohesiveness, roles, norms, and ostracism in regard to the behavior of group members.

cohesiveness tendency of group to stick together



14B

Back to the Opening Case

What evidence of formal and informal groups can you detect at Lear? What are the practical implications of Eliminator team members being friends as well as coworkers?

Table 14.1

Factors That Enhance or Detract from Group Attractiveness and Cohesiveness	Factors that enhance	Factors that detract
	<ol style="list-style-type: none"> 1. Prestige and status 2. Cooperative relationship 3. High degree of interaction 4. Relatively small size 5. Similarity of members 6. Superior public image of the group 7. A common threat in the environment 	<ol style="list-style-type: none"> 1. Unreasonable or disagreeable demands on the individual 2. Disagreement over procedures, activities, rules, and the like 3. Unpleasant experience with the group 4. Competition between the group's demands and preferred outside activities 5. Unfavorable public image of the group 6. Competition for membership by other groups

Source: Table adapted from *Group Dynamics: Research and Theory*, 2nd ed., by Dorwin Cartwright and Alvin Zander. New York: HarperCollins Publishers, Inc.

Dale's departure within a few months of this episode is not surprising in view of the fact that Tramiel's conduct destroyed work group attractiveness and cohesiveness.

Roles

role socially determined way of behaving in a specific position

According to Shakespeare, "All the world's a stage, and all the men and women merely players." In fact, Shakespeare's analogy between life and play-acting can be carried a step further—to organizations and their component formal work groups. Although employees do not have scripts, they do have formal positions in the organizational hierarchy, and they are expected to adhere to company policies and rules. Furthermore, job descriptions and procedure manuals spell out how jobs are to be done. In short, every employee has one or more organizational roles to play. An organization that is appropriately structured, in which everyone plays his or her role(s) effectively and efficiently, will have a greater chance for organizational success.

A social psychologist has described the concept of role as follows:

The term role is used to refer to (1) a set of expectations concerning what a person in a given position must, must not, or may do, and (2) the actual behavior of the person who occupies the position. A central idea is that any person occupying a position and filling a role behaves similarly to anyone else who could be in that position.¹¹

A **role**, then, is a socially determined prescription for behavior in a *specific* position. Roles evolve out of the tendency for social units to perpetuate themselves, and roles are socially enforced. Role models are a powerful influence. They are indispensable to those trying to resolve the inherent conflicts between work and family roles, for example.¹²



Toward a Sense of Community in the Workplace

14C

Carolyn Schaffer and Kristin Anundsen, authors of the book, *Creating Community Anywhere: Finding Support and Connection in a Fragmented World*:

Community is a dynamic whole that emerges when a group of people:

- Participate in common practices;
- Depend upon one another;
- Make decisions together;
- Identify themselves as part of something larger than the sum of their individual relationships; and
- Commit themselves for the long term to their own, one another's, and the group's well-being.

Source: Quoted in Ron Zemke, "The Call of Community," *Training*, 33 (March 1996): 27.

Questions: How important is it to build this sense of community in today's work groups and organizations? Explain. What is your personal experience with a genuine feeling of community? Are we naive to expect a sense of community in today's hurried and rapidly changing workplace? Explain.

Norms

Norms define “degrees of acceptability and unacceptability.”¹³ More precisely, **norms** are general standards of conduct that help individuals judge what is right or wrong or good or bad in a given social setting (such as work, home, play, or religious organization). Because norms are culturally derived, they vary from one culture to another. For example, public disagreement and debate, which are normal in Western societies, are often considered rude in Eastern countries such as Japan.

Norms have a broader influence than do roles, which focus on a specific position. Although usually unwritten, norms influence behavior enormously.¹⁴

Every mature group, whether informal or formal, generates its own pattern of norms that constrains and directs the behavior of its members. Norms are enforced for at least four different reasons:

1. To facilitate survival of the group.
2. To simplify or clarify role expectations.
3. To help group members avoid embarrassing situations (protect self-images).
4. To express key group values and enhance the group's unique identity.¹⁵

As illustrated in Figure 14.2, norms tend to go above and beyond formal rules and written policies. Compliance is shaped with social reinforcement in the form of attention, recognition, and acceptance.¹⁶ Those who fail to comply with the norm may be criticized or ridiculed. For example, consider the pressure Gwendolyn Kelly experienced in medical school:

The word among students is that if you've got any brains, “tertiary” medicine—which involves complex diagnostic procedures and comprehensive care—is where it's at. Instructors often

14D

Back to the Opening Case

How did role expectations and norms pave the way to success for the Lear team?

norms general standards of conduct for various social settings

Figure 14.2

Norms Are Enforced for Different Reasons

Sample norms:

“Don't criticize the work of our white-collar productivity task force in front of the director of finance, a person who thinks we're wasting time and money.”

“Make sure you've done your homework before meeting with the division head.”

“Don't discuss religion in the company cafeteria.”

“Listen carefully to complaints from minority employees because, unlike the other shifts, the second-shift supervisors have never had a discrimination complaint filed against them.”

Why these norms would be enforced:

Helps the group survive.

Clarifies role expectations.

Avoids embarrassment and protects self-images.

Emphasizes key values and enhances group's identity.

Team sports offer many instructive lessons in group dynamics. Pictured here are the Michigan State Spartans on their way to beating the defending national champion, the University of Connecticut Huskies, 85-66 toward the end of the 1999–2000 season. Referees made sure players on both basketball teams followed the rules. For example, UConn was called for charging on this play. But largely unseen by referees and fans are the subtle yet powerful pressures team members put on each other—to enforce norms about being a team player and always giving your best effort. Michigan State ultimately captured the national title.



refer to the best students as “future surgeons” and belittle the family-practice specialty. These attitudes trickle down. I’ve heard my peers say the reason so many women choose pediatrics is that “they want to be mommies.” And students who take a family-practice residency may be maligned by colleagues who say the choice is a sign of subpar academic credentials.¹⁷

Reformers of the U.S. health care system, who want to increase the number of primary care (family practice) doctors from one-third to one-half, need to begin by altering medical school norms.

Worse than ridicule is the threat of being ostracized. **Ostracism**, or rejection from the group, is figuratively the capital punishment of group dynamics. Informal groups derive much of their power over individuals through the ever-present threat of ostracism. Thus, informal norms play a pivotal role in on-the-job ethics.¹⁸ Police officers, for example, who honor the traditional “code of silence” norm that demands *total* loyalty to one’s fellow officers, face a tough moral dilemma (see Management Ethics).

ostracism rejection from a group

Group Development

Like inept youngsters who mature into talented adults, groups undergo a maturation process before becoming effective. We have all experienced the uneasiness associated with the first meeting of a new group, be it a class, club, or committee. Initially, there is little mutual understanding, trust, and commitment among the new group

Management Ethics



A Cop-Turned-Professor Takes Aim at the Code of Silence

Several factors enable the code to infect even the most well-intentioned officers. The way a law enforcement organization describes its mission can influence how much misbehavior officers will tolerate from peers. Many police managers and politicians portray officers as a thin line of warriors standing between civilization and the barbarian hordes.

This unrealistic expectation that cops, rather than communities, control crime increases the zeal with which many officers approach their job. When one participates in a crusade, it is easy to rationalize extreme measures.

The patrol environment is also important. We often have unrealistic expectations of patrol officers in high-crime areas, who regularly handle several adrenaline-pumping incidents a shift. Moreover, they often do so while exhausted from overtime assignments, off-duty court appearances, and job-related activities such as attending college. This combination of environmental stressors and fatigue magnifies perceptions of threats, degrades decision-making, and increases the tendency to overreact. . . .

Combining institutionally fostered zealotry with unrealistic physical and emotional expectations is a recipe for misconduct.

Take the case of a normally diligent and professional officer who erupts and strikes that one person too many who screams in his face at the end of an arduous night. Acting out of anger rather than fear for his safety, he has committed a felony. If he is truthful, the career that defines him is over. He could go to prison. If he chooses to lie, he must obtain his partner's complicity. They both know he was wrong, but they also know that any person who repeatedly dealt with the same situation would blow it eventually. Recognizing that the system makes impossible demands and offers impossible choices, they choose to submit a false report and, if necessary, perjure themselves.

The code of silence is reborn each time this decision is made.

Later, when his partner uses excessive force, our officer reciprocates. Eventually, even the most idealistic officers can be infected by the code. As this erodes an officer's moral fiber, self-interest and continued stress make future compromises easier. Since police agencies promote mostly from within, many supervisors and managers are tainted by past misdeeds. This hardly leaves them in a position to control the behavior of subordinates.

The code of silence can undermine even determined attempts at police reform. If we want to control the conduct of our police and strengthen their ability to work with communities to control crime, we need to inhibit the code. How? First, we should debunk the demagoguery of the "thin blue line" myth. Our inner cities need calm professional officers, not exhausted crusaders.

More fundamentally, we must ensure that officers are emotionally and physically fit for duty each time they hit the streets, just as the military must ensure the reliability of those who control nuclear weapons. For decades, the military has accomplished this via personnel reliability programs combining cooperative self-regulation with active monitoring by health-care professionals.

Exhausted or otherwise debilitated cops should be encouraged to excuse themselves from duty. Good cops protect one another. Supervisors and peers need to learn that protection includes convincing unfit officers to stay off the streets. As a final safety check, a trained professional should have the authority to immediately remove unfit officers from duty. Personnel reliability program costs would be offset by fewer lawsuits and accidents.

Steps such as these would neither condone nor excuse police misbehavior. But they would attack the source of the awful silence that allows it to persist.

Source: Excerpted from Bryan Vila, "The Cops' Code of Silence," *The Christian Science Monitor* (August 31, 1992): 18. Reprinted by permission of the author.

members, and their uncertainty over objectives, roles, and leadership doesn't help. The prospect of cooperative action seems unlikely in view of defensive behavior and differences of opinion about who should do what. Someone steps forward to assume a leadership role, and the group is off and running toward eventual maturity (or perhaps premature demise). A working knowledge of the characteristics of a mature group can help managers envision a goal for the group development process.

Characteristics of a Mature Group

If and when a group takes on the following characteristics, it can be called a mature group:

1. Members are aware of their own and each other's assets and liabilities vis-à-vis the group's task.
2. These individual differences are accepted without being labeled as good or bad.
3. The group has developed authority and interpersonal relationships that are recognized and accepted by the members.
4. Group decisions are made through rational discussion. Minority opinions and dissension are recognized and encouraged. Attempts are not made to force decisions or a false unanimity.
5. Conflict is over substantive group issues such as group goals and the effectiveness and efficiency of various means for achieving those goals. Conflict over emotional issues regarding group structure, processes, or interpersonal relationships is at a minimum.
6. Members are aware of the group's processes and their own roles in them.¹⁹

Effectiveness and productivity should increase as the group matures. Recent research with groups of school teachers found positive evidence in this regard. The researchers concluded: "Faculty groups functioning at higher levels of development have students who perform better on standard achievement measures."²⁰ This finding could be fruitful for those seeking to reform and improve the American education system.

A hidden but nonetheless significant benefit of group maturity is that individuality is strengthened and not extinguished.²¹ Protecting the individual's right to dissent is particularly important in regard to the problem of blind obedience, which we shall consider later in this chapter.

Six Stages of Group Development

3 Identify and briefly describe the six stages of group development.

Experts have identified six distinct stages in the group development process²² (see Figure 14.3). During stages 1 through 3, attempts are made to overcome the obstacle of uncertainty over power and authority. Once this first obstacle has been surmounted, uncertainty over interpersonal relations becomes the challenge. This second obstacle must be cleared during stages 4 through 6 if the group is to achieve maturity. Each stage confronts the group's leader and contributing members with a unique combination of problems and opportunities.

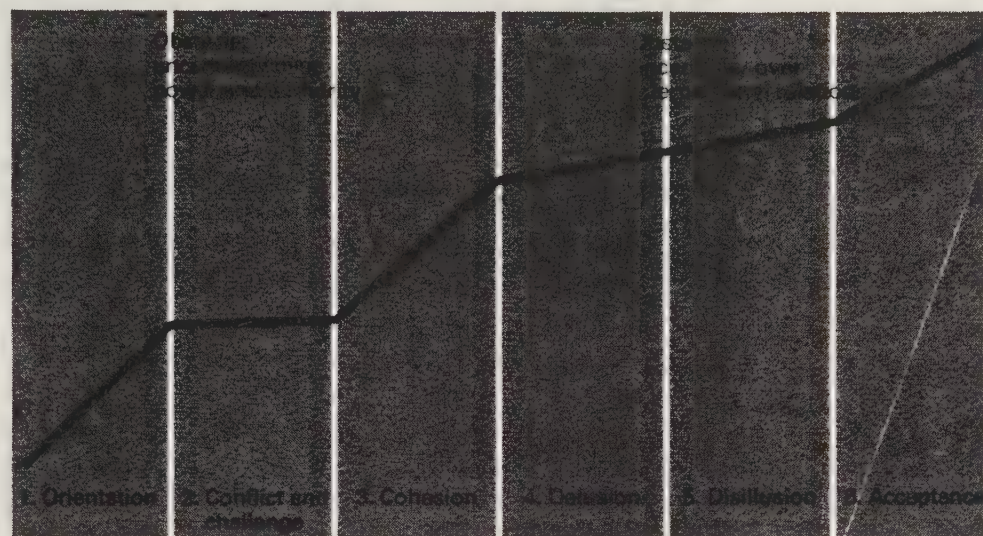
Stage 1: Orientation. Attempts are made to "break the ice." Uncertainty about goals, power, and interpersonal relationships is high. Members generally want and accept any leadership at this point. Emergent leaders often misinterpret this "honeymoon period" as a mandate for permanent control.

Stage 2: Conflict and Challenge. As the emergent leader's philosophy, objectives, and policies become apparent, individuals or subgroups advocating alternative courses of action struggle for control. This second stage may be prolonged while members strive to clarify and reconcile their roles as part of a complete redistribution of power and authority. Many groups never continue past stage 2 because they get bogged down due to emotionalism and political infighting. Committees within the organization often bear the brunt of jokes because their frequent failure to mature beyond stage 2 prevents them from accomplishing their goals. (As one joke goes, a camel is a horse designed by a committee.)

Figure 14.3

Group Development from Formation to Maturity

Degree of group maturity

Mature
(efficient,
effective)Immature
(inefficient,
ineffective)Stages of group
development

Source: *Group Effectiveness in Organizations*, by Linda N. Jewell and H. Joseph Reitz, p. 20. Used with permission of the authors.

Stage 3: Cohesion. The shifts in power started in stage 2 are completed, under a new leader or the original leader, with a new consensus on authority, structure, and procedures. A “we” feeling becomes apparent as everyone becomes truly involved. Any lingering differences over power and authority are resolved quickly. Stage 3 is usually of relatively short duration. If not, the group is likely to stall.

Stage 4: Delusion. A feeling of “having been through the worst of it” prevails after the rather rapid transition through stage 3. Issues and problems that threaten to break this spell of relief are dismissed or treated lightly. Members seem committed to fostering harmony at all costs. Participation and camaraderie run high as members believe that all the difficult emotional problems have been solved.

Stage 5: Disillusion. Subgroups tend to form as the delusion of unlimited goodwill wears off, and there is a growing disenchantment with how things are turning out. Those with unrealized expectations challenge the group to perform better and are prepared to reveal their personal strengths and weaknesses if necessary. Others hold back. Tardiness and absenteeism are symptomatic of diminishing cohesiveness and commitment.

Stage 6: Acceptance. It usually takes a trusted and influential group member who is concerned about the group to step forward and help the group move from conflict to cohesion. This individual, acting as the group catalyst, is usually someone

Developing a work group into an effective and efficient team sometimes can be a life-and-death matter. Following the devastating earthquakes in Turkey in 1999, search-and-rescue teams from around the world joined in a race against the clock. This nine-year-old girl, buried in rubble for 100 hours, was rescued by an Israeli military team.



14E

Back to the Opening Case

Making reasonable assumptions, Lear's nine-member Eliminators team appears to be at which stage of group development? How can you tell?

other than the leader. Members are encouraged to test their self-perceptions against the reality of how others perceive them. Greater personal and mutual understanding helps members adapt to situations without causing problems. Members' expectations are more realistic than ever before. Since the authority structure is generally accepted, subgroups can pursue different matters without threatening group cohesiveness. Consequently, stage 6 groups tend to be highly effective and efficient.

Time-wasting problems and inefficiencies can be minimized if group members are consciously aware of this developmental process. Just as it is impossible for a child to skip being a teenager on the way to adulthood, committees and other work groups will find that there are no short cuts to group maturity. Some emotional stresses and strains are inevitable along the way.²³

Organizational Politics

4 Define organizational politics and summarize relevant research insights.

Only in recent years has the topic of organizational politics (also known as impression management) begun to receive serious attention from management theorists and researchers.²⁴ But as we all know from practical experience, organizational life is often highly charged with political wheeling and dealing. A corporate executive has underscored this point by asking:

*Have you ever done a very satisfactory piece of work only to have it lost in the organizational shuffle? Have you ever come up with a new idea only to have your boss take credit for it? Have you ever faced a situation where someone else made a serious mistake and somehow engineered it so you got the blame?*²⁵

Workplace surveys reveal that organizational politics can hinder effectiveness and be an irritant to employees. A recent three-year study of 46 companies attempting to establish themselves on the Internet "found that poor communication and political infighting were the No. 1 and No. 2 causes, respectively, for slowing down change."²⁶ Meanwhile, 44 percent of full-time employees and 60 percent of independent contractors listed "freedom from office politics" as extremely important to their job satisfaction.²⁷

Whether politically motivated or not, managers need to be knowledgeable about organizational politics because their careers will be affected by it.²⁸ New managers, particularly, should be aware of the political situation in their organization. As "new kids on the job" they might be more easily taken advantage of than other more experienced managers.²⁹ Certain political maneuvers also have significant ethical implications³⁰ (see Table 14.2).

Table 14.2

How Do You Feel About "Hard Ball" Organizational Politics?

Circle one number for each item, total your responses, and compare your score with the scale below:

	Unacceptable attitude/conduct			Acceptable attitude/conduct	
1. The boss is always right.	1	2	3	4	5
2. If I were aware that an executive in my company was stealing money, I would use that information against him or her in asking for favors.	1	2	3	4	5
3. I would invite my boss to a party in my home even if I didn't like that person.	1	2	3	4	5
4. Given a choice, take on only those assignments that will make you look good.	1	2	3	4	5
5. I like the idea of keeping a "blunder (error) file" about a company rival for future use.	1	2	3	4	5
6. If you don't know the correct answer to a question asked by your boss, bluff your way out of it.	1	2	3	4	5
7. Why go out of your way to be nice to any employee in the company who can't help you now or in the future?	1	2	3	4	5
8. It is necessary to lie once in a while in business in order to look good.	1	2	3	4	5
9. Past promises should be broken if they stand in the way of one's personal gain.	1	2	3	4	5
10. If someone compliments you for a task that is another's accomplishment, smile and say thank you.	1	2	3	4	5

Scale

- 10–20 = Straight arrow with solid ethics.
 21–39 = Closet politician with elastic ethics.
 40–50 = Hard ball politician with no ethics.

Total score = _____

Source: From *Winning Office Politics* by Andrew Dubrin. Copyright © 1990. Reprinted with permission of Prentice-Hall Direct.

organizational politics
the pursuit of self-interest in
response to real or imagined
opposition

What Does Organizational Politics Involve?

As the term implies, self-interest is central to organizational politics. In fact, **organizational politics** has been defined as “the pursuit of self-interest at work in the face of real or imagined opposition.”³¹ Political maneuvering is said to encompass all self-serving behavior above and beyond competence, hard work, and luck.³² Although the term organizational politics has a negative connotation, researchers have identified both positive and negative aspects:

Political behaviors widely accepted as legitimate would certainly include exchanging favors, “touching bases,” forming coalitions, and seeking sponsors at upper levels. Less legitimate behaviors would include whistle-blowing, revolutionary coalitions, threats, and sabotage.³³

Recall our discussion of whistle-blowing in Chapter 5.

Employees resort to political behavior when they are unwilling to trust their career solely to competence, hard work, or luck. One might say that organizational politicians help luck along by relying on political tactics. Whether employees will fall back on political tactics has a lot to do with an organization’s climate or culture. A culture that presents employees with unreasonable barriers to individual and group success tends to foster political maneuvering. Consider this situation, for example: “A cadre of Corvette lovers inside General Motors lied, cheated, and stole to keep the legendary sports car from being eliminated during GM’s management turmoil and near-bankruptcy in the late 1980s and early 1990s.”³⁴ The redesigned Corvette finally made it to market in 1997, thanks in part to the Corvette team giving high-level GM executives thrilling unauthorized test rides in the hot new model.

Research on Organizational Politics

Researchers in one widely cited study of organizational politics conducted structured interviews with 87 managers employed by 30 electronics firms in southern California. Included in the sample were 30 chief executive officers, 28 middle managers, and 29 supervisors. Significant results included the following:

- The higher the level of management, the greater the perceived amount of political activity.
- The larger the organization, the greater the perceived amount of political activity.
- Personnel in staff positions were viewed as more political than those in line positions.
- People in marketing were the most political; those in production were the least political.
- “Reorganization changes” reportedly prompted more political activity than any other type of change.
- A majority (61 percent) of those interviewed believed organizational politics helps advance one’s career.
- Forty-five percent believed that organizational politics distracts from organizational goals.³⁵

Regarding the last two findings, it was clear that political activities were seen as helpful to the individual. On the other hand, the interviewed managers were split on the question of the value of politics to the organization. Managers who believed political behavior had a positive impact on the organization cited the following reasons: “gaining visibility for ideas, improving coordination and communication, developing teams and groups, and increasing *esprit de corps*. . . .”³⁶ As listed above, the most often

cited negative effect of politics was its distraction of managers from organizational goals. Misuse of resources and conflict were also mentioned as typical problems.

Political Tactics

As defined earlier, organizational politics takes in a lot of behavioral territory. The following six political tactics are common expressions of politics in the workplace:

- **Posturing.** Those who use this tactic look for situations in which they can make a good impression. "One-upmanship" and taking credit for other people's work are included in this category.
- **Empire building.** Gaining and keeping control over human and material resources is the principal motivation behind this tactic. Those with large budgets usually feel more safely entrenched in their positions and believe they have more influence over peers and superiors.
- **Making the supervisor look good.** Traditionally referred to as "apple polishing," this political strategy is prompted by a desire to favorably influence those who control one's career ascent. Anyone with an oversized ego is an easy target for this tactic.
- **Collecting and using social IOUs.** Reciprocal exchange of political favors can be done in two ways: (1) by helping someone look good or (2) by preventing someone from looking bad by ignoring or covering up a mistake. Those who rely on this tactic feel that all favors are coins of exchange rather than expressions of altruism or unselfishness.



How Political Are You?

14F

Characteristics of Political Behaviors

Characteristics	Naïve	Sensible	Sharks
Underlying Attitude	Politics is unpleasant	Politics is necessary	Politics is an opportunity
Intent	Avoid at all costs	Further departmental goals	Self-serving and predatory
Techniques	Tell it like it is	Network; expand connections; use system to give and receive favors	Manipulate; use fraud and deceit when necessary
Favorite Tactics	None—the truth will win out	Negotiate, bargain	Bully; misuse information; cultivate and use "friends" and other contacts

Source: Model from Jeffrey K. Pinto and Om P. Kharbanda, "Lessons for an Accidental Profession."

Reprinted with permission from *Business Horizons*, 38 (March–April 1995): 45. Copyright © 1995 by the Board of Trustees at Indiana University, Kelley School of Business.

Questions: Based on your responses to the quiz in Table 14.2 and your review of the above model, are you politically naïve, politically sensible, or a political shark? Thinking of people you know who fit into the different categories, how well are their careers progressing? What are the personal and organizational implications of your political tendencies? What are the ethical implications of your orientation toward organizational politics?

- *Creating power and loyalty cliques.* Because there is power in numbers, the idea here is to face superiors and competitors as a cohesive group rather than alone.
- *Destructive competition.* As a last-ditch effort, some people will resort to character assassination through suggestive remarks, vindictive gossip, or outright lies. This tactic also includes sabotaging the work of a competitor.³⁷

Obvious illegalities notwithstanding, one's own values and ethics and organizational sanctions are the final arbiters of whether or not these tactics are acceptable. (See Table 14.3 for a practicing manager's advice on how to win at office politics.)

Antidotes to Political Behavior

Each of the foregoing political tactics varies in degree. The average person will probably acknowledge using at least one of these strategies. But excessive political maneuvering can become a serious threat to productivity when self-interests clearly override the interests of the group or organization. Organizational politics can be kept within reasonable bounds by applying the following five tips:

- Strive for a climate of openness and trust.
- Measure performance results rather than personalities.
- Encourage top management to refrain from exhibiting political behavior that will be imitated by employees.
- Strive to integrate individual and organizational goals through meaningful work and career planning.³⁸
- Practice job rotation to encourage broader perspectives and understanding of the problems of others.³⁹

Table 14.3

One Manager's Rules for Winning at Office Politics

1. Find out what the boss expects.
2. Build an information network. Knowledge is power. Identify the people who have power and the extent and direction of it. Title doesn't necessarily reflect actual influence. Find out how the grapevine works. Develop good internal public relations for yourself.
3. Find a mentor. This is a trusted counselor who can be honest with you and help train and guide you to improve your ability and effectiveness as a manager.
4. Don't make enemies without a very good reason.
5. Avoid cliques. Keep circulating in the office.
6. If you must fight, fight over something that is really worth it. Don't lose ground over minor matters or petty differences.
7. Gain power through allies. Build ties that bind. Create IOUs, obligations, and loyalties. Do not be afraid to enlist help from above.
8. Maintain control. Don't misuse your cohorts. Maintain the status and integrity of your allies.
9. Mobilize your forces when necessary. Don't commit your friends without their approval. Be a gracious winner when you do win.
10. Never hire a family member or a close friend.

Source: Adapted from David E. Hall, "Winning at Office Politics," *Credit & Financial Management*, 86 (April 1984): 23. Reprinted with permission from *Credit & Financial Management*, copyright April 1984, published by the National Association of Credit Management, 475 Park Avenue South, New York, NY 10016.

Conformity and Groupthink

Conformity means complying with the role expectations and norms perceived by the majority to be appropriate in a particular situation. Conformity enhances predictability, generally thought to be good for rational planning and productive enterprise. How can anything be accomplished if people cannot be counted on to perform their assigned duties? On the other hand, why do so many employees actively participate in or passively condone illegal and unethical organizational practices involving discrimination, environmental degradation, and unfair competition? The answers to these questions lie along a continuum with anarchy at one end and blind conformity at the other. Socially responsible management is anchored to a point somewhere between them.

conformity *complying with prevailing role expectations and norms*

Research on Conformity

Social psychologists have discovered much about human behavior by studying individuals and groups in controlled laboratory settings. One classic laboratory study conducted by Solomon Asch was designed to answer the question, How often will an individual take a stand against a unanimous majority that is obviously wrong?⁴⁰ Asch's results were both intriguing and unsettling.

The Hot Seat. Asch began his study by assembling groups of seven to nine college students, supposedly to work on a perceptual problem. Actually, though, Asch was studying conformity. All but one member of each group were Asch's confederates, and Asch told them exactly how to behave and what to say. The experiment was really concerned with the reactions of the remaining student—called the naive subject—who didn't know what was going on.

All the students in each group were shown cards with lines similar to those in Figure 14.4. They were instructed to match the line on the left with the one on the right that was closest to it in length. The differences in length among the lines on the right were obvious. Each group went through 12 rounds of the matching process, with a different set of lines for every round. The researcher asked one group member at a time to announce to the group his or her choice. Things proceeded normally for the first two rounds as each group member voiced an opinion. Agreement was unanimous. Suddenly, on the third round only one individual, the naive subject, chose the correct pair of lines.

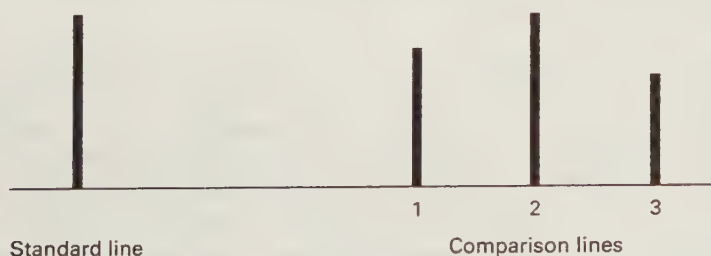


Figure 14.4

The Asch Line Experiment

All the other group members chose a different (and obviously wrong) pair. During the rounds in which there was disagreement, all of Asch's confederates conspired to select an incorrect pair of lines. It was the individual versus the rest of the group.

Following the Immoral Majority. Each of the naive subjects was faced with a personal dilemma. Should he or she fight the group or give in to the obviously incorrect choice of the overwhelming majority? Among 31 naive subjects who made a total of 217 judgments, two-thirds of the judgments were correct. The other one-third were incorrect; that is, they were consistent with the majority opinion. Individual differences were great, with some subjects yielding to the incorrect majority opinion more readily than others. *Only 20 percent of the naive subjects remained entirely independent in their judgments.* All the rest turned their backs on their own perceptions and went along with the group at least once. In other words, 80 percent of Asch's subjects knuckled under to the pressure of group opinion at least once, even though they knew the majority was dead wrong.

Replications of Asch's study in the Middle East (Kuwait) and in Japan have demonstrated that this tendency toward conformity is not unique to American culture.⁴¹ Indeed, a recent statistical analysis of 133 Asch conformity studies across 17 countries concluded that blind conformity is a greater problem in collectivist ("we") cultures than in individualist ("me") cultures. Japan is strongly collectivist, whereas the United States and Canada are highly individualistic cultures.⁴² (You may find it instructive to ponder how you would act in such a situation.)

Because Asch's study was a contrived laboratory experiment, it failed to probe the relationship between cohesiveness and conformity. Asch's naive subjects were outsiders. But more recent research on "groupthink" has shown that a cohesive group of insiders can fall victim to blind conformity.

Groupthink

5 Explain how groupthink can lead to blind conformity.

groupthink Janis's term for blind conformity in cohesive in-groups

After studying the records of several successful and unsuccessful American foreign policy decisions, psychologist Irving Janis uncovered an undesirable byproduct of group cohesiveness. He labeled this problem **groupthink** and defined it as a "mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action."⁴³ Groupthink helps explain how intelligent policymakers, in both government and business, can sometimes make incredibly unwise decisions.

One dramatic result of groupthink in action was the Vietnam War. Strategic advisors in three successive administrations unwittingly rubber-stamped battle plans laced with false assumptions. Critical thinking, reality testing, and moral judgment were temporarily shelved as decisions to escalate the war were enthusiastically railroaded through. Although Janis acknowledges that cohesive groups are not inevitably victimized by groupthink, he warns group decision makers to be alert for the signs of groupthink—the risk is always there.

Symptoms of Groupthink. According to Janis, the onset of groupthink is foreshadowed by a definite pattern of symptoms. Among these are excessive optimism, an assumption of inherent morality, suppression of dissent, and an almost desperate quest for unanimity.⁴⁴ Given such a decision-making climate, the probability of a poor decision is high. Managers face a curious dilemma here. While a group is still in stage 1 or stage 2 of development, its cohesiveness is too low to get much accomplished because of emotional and time-consuming power struggles. But by the time the group achieves enough cohesiveness in stage 3 to make decisions promptly, the risk of groupthink is

high. The trick is to achieve needed cohesiveness without going to the extreme of groupthink.

Preventing Groupthink. According to Janis, one of the group members should periodically ask, “Are we allowing ourselves to become victims of groupthink?”⁴⁵ More fundamental preventive measures include the following:

- Avoiding the use of groups to rubber-stamp decisions that have already been made by higher management.⁴⁶
- Urging each group member to be a critical evaluator.
- Bringing in outside experts for fresh perspectives.
- Assigning to someone the role of devil’s advocate to challenge assumptions and alternatives.⁴⁷
- Taking time to consider possible side effects and consequences of alternative courses of action.⁴⁸

Ideally, decision quality will improve when these steps become second nature in cohesive groups. Dayton Hudson Corp. has structured its board of directors to avoid groupthink and effectively monitor the performance of its chief executive officer. Lots of outside advice keeps the Minneapolis-based owner of Marshall Field’s and Target department stores on track:

Twelve out of 14 directors are outsiders. A vice chairman chosen from among the outside directors serves as a special liaison between the board and the CEO. The result is a powerful, independent group of directors—a rare species in boardrooms today.⁴⁹

Managers who cannot imagine themselves being victimized by blind conformity are prime candidates for groupthink. Dean Tjosvold of Canada’s Simon Fraser University recommends “cooperative conflict” (see Skills & Tools at the end of this chapter). The constructive use of conflict is discussed further in Chapter 16.



Fighting Groupthink with Diversity

14G

Because group cohesiveness is directly related to degree of homogeneity, and because groupthink only occurs in highly cohesive groups, the presence of cultural diversity in groups should reduce the probability of groupthink.

Source: Taylor Cox Jr., *Cultural Diversity in Organizations: Theory, Research, and Practice* (San Francisco: Berrett-Koehler, 1993), p. 34.

Questions: *Is groupthink likely to be more or less of a problem in a group whose members are both women and men of varying ages from different cultures and with different backgrounds and life experiences? Explain.*

Teams, Teamwork, and Trust

Ask Gordon Bethune, CEO of Continental Airlines, about the secret to success in his highly competitive industry today and he zeros in on *teamwork*:

Running an airline is the biggest team sport there is. It’s not an approach, it’s not reorganization, and it’s not a daily team plan. We are like a wristwatch—lots of different parts, but the whole has value only when we all work together. It has no value when any part fails. So we are not a cross-functional team, we’re a company of multi functions that has value when we all work cooperatively—pilots, flight attendants, gate agents, airport agents, mechanics, reservation agents. And not to understand that about doing business means you’re going to fail. Lots of people failed because they don’t get it.⁵⁰

Thus, teams and teamwork are vital group dynamics in the modern workplace.⁵¹ Unfortunately, team skills in today’s typical organization tend to lag far behind technical

You want the finest hand-tailored Italian suit? Ciro Paone, founder of Kiron in Naples, Italy, has the right formula. A team of master tailors + 24 hours of labor + lots of passion + love + the finest materials = one suit costing up to \$5,000. World-class quality takes incredible talent, teamwork, and dedication to craft. And in this case, it doesn't come cheap!



skills.⁵² It is one thing to be a creative software engineer, for example. It is quite another for that software specialist to be able to team up with other specialists in accounting, finance, and marketing to beat the competition to market with a profitable new product. In this final section, we explore teams and teamwork by discussing cross-functional teams, virtual teams, a model of team effectiveness, and the importance of trust.

Cross-Functional Teams

cross-functional team
task group staffed with a mix of
specialists pursuing a common
objective

A **cross-functional team** is a task group staffed with a mix of specialists focused on a common objective. This structural innovation deserves special attention here because cross-functional teams are becoming commonplace.⁵³ They may or may not be self-managed, although self-managed teams generally are cross-functional. Cross-functional teams are based on assigned rather than voluntary membership. Quality control (QC) circles made up of volunteers, discussed in Chapter 13, technically are in a different category. Cross-functional teams stand in sharp contrast to the tradition of lumping specialists into functional departments, thereby creating the problem of integrating and coordinating those departments. Boeing, for example, relies on cross-functional teams to integrate its various departments to achieve important strategic goals. The giant aircraft manufacturer thus accelerated its product development process for the Boeing 777 jetliner. Also, Boeing engineer Grace Robertson turned to cross-functional teams for faster delivery of a big order of customized jetliners to United Parcel Service:

When UPS ordered 30 aircraft, Boeing guaranteed that it could design and build a new, all-cargo version of the 767 jet in a mere 33 months—far faster than the usual cycle time of 42 months. The price it quoted meant slashing development costs dramatically.

Robertson's strategy has been to gather all 400 employees working on the new freighter into one location and organize them into "cross-functional" teams. By combining people from the design, planning, manufacturing, and tooling sectors, the teams speed up development and cut costs by enhancing communication and avoiding rework.⁵⁴

This teamwork approach helped Robertson's group stay on schedule and within its budget, both vitally important achievements in Boeing's quest to remain the world's leading aircraft maker.

Cross-functional teams have exciting potential. But they present management with the immense challenge of getting technical specialists to be effective boundary spanners.

Virtual Teams

Along with the move toward virtual organizations, discussed in Chapter 10, have come virtual teams. A **virtual team** is a physically dispersed task group linked electronically.⁵⁵ Face-to-face contact usually is minimal or nonexistent. E-mail, voice mail, videoconferencing, and other forms of electronic interchange allow members of virtual teams from anywhere on the planet to accomplish a common goal. It is commonplace today for virtual teams to have members from different organizations, different time zones, and different cultures.⁵⁶ Because virtual organizations and teams are so new, paced as they are by emerging technologies, managers are having to learn from the school of hard knocks rather than from established practice.

As discussed in Chapter 10 relative to virtual organizations, one reality of managing virtual teams is clear. *Periodic face-to-face interaction, trust building, and team building are more important than ever when team members are widely dispersed in time and space.* While faceless interaction may work in Internet chat rooms, it can doom a virtual team

6 Define and discuss the management of virtual teams.

virtual team task group members from dispersed locations who are electronically linked



Call it new millennium motherhood. When Joanna Dapkevich got pregnant in 1997, her boss at IBM okayed her proposal to retain a part-time portion of her job as the manager of 50 software sales representatives. Here she steers her "virtual team" in Raleigh, North Carolina, from her home ten miles away. Dapkevich's long-distance management requires just the right combination of teamwork and trust. Her toddler seems to be very pleased with the arrangement.

with a crucial task and pressing deadline. Additionally, special steps need to be taken to clearly communicate role expectations, performance norms, goals, and deadlines (see Table 14.4). Virtual teamwork may be faster than the traditional face-to-face kind, but it is by no means easier (see Closing Case).

What Makes Workplace Teams Effective?

7 Discuss the criteria and determinants of team effectiveness.

Widespread use of team formats—including QC circles, self-managed teams, cross-functional teams, and virtual teams—necessitates greater knowledge of team effectiveness.⁵⁷ A model of team effectiveness criteria and determinants is presented in Figure 14.5. This model is the product of two field studies involving 360 new-product development managers employed by 52 high-tech companies.⁵⁸ Importantly, it is a generic model, applying equally well to all workplace teams.⁵⁹

Table 14.4

It Takes More than E-mail to Build a Virtual Team

Teams need a structure to work successfully across time and distance. In *Mastering Virtual Teams: Strategies, Tools, and Techniques That Succeed*, authors Deborah Duarte and Nancy Tennant Snyder list six steps for creating a virtual team, of which each acts as a support beam that helps uphold the structure.

- 1. Identify the team's sponsors, stakeholders, and champions.** These are the people who connect the team to the power brokers within the organizations involved.
- 2. Develop a team charter that includes its purpose, mission, and goals.** The authors say it's best to do this in a face-to-face meeting that includes the team's leader, management, and other stakeholders.
- 3. Select team members.** Most virtual teams have at least three types of members: *core* members who regularly work on the project; *extended* members who provide support and advice; and *ancillary* members who review and approve work.
- 4. Contact team members and introduce them to each other.** During this initial meeting, team leaders should make sure members understand why they've been selected, use computers that are compatible, and have a forum in which to ask and get answers to questions. Duarte says leaders should use this time to find out what other projects members are working on. "It's easy to put people on a team when you can't see them," she says. "People don't say 'no,' but then they find themselves on five or six teams and don't have time for any of them."
- 5. Conduct a team-orientation session.** This is one of the most important steps. Duarte says an eyeball-to-eyeball meeting is essential, unless team members are working on a very short task or have worked together in another capacity and know each other. "This forms the basis for more natural dialogue later if problems arise," she says. At this getting-to-know-you session, which often includes some type of team-building activity, the leader should provide an overview of the team's charter so members understand the task they are charged with and their roles in achieving it.
 Leaders also should provide guidance in developing team norms. This includes discussing telephone, audio- and video-conference etiquette; establishing guidelines for sending and replying to e-mail and returning phone calls; determining which meetings members must attend in person and which can be done by audio- or videoconference; outlining how work will be reviewed; and discussing how meetings will be scheduled.
 Team leaders also can use this session to decide which technologies the team will use and discuss how members will communicate with each other, with the leader, and with management.
- 6. Develop a team process.** Leaders should explain how the team's work will be managed, how information will be stored and shared, and who will review documents and how often.
 Duarte says teams that follow these steps often have a better sense of clarity about their goals, the roles of each member, how the work will get done, and how the team will communicate. "They don't feel as though they've been left floating."

Source: Kim Kiser, "Building a Virtual Team," *Training*, 36 (March 1999): 34. Reprinted with permission from the March 1999 issue of *Training* magazine. Copyright 1999, Bill Communications, Minneapolis, Minn. All rights reserved. Not for resale.

Figure 14.5

A Model of Team Effectiveness

People-related factors

- Personal work satisfaction
- Mutual trust and team spirit
- Good communications
- Low unresolved conflict and power struggle
- Low threat, fail-safe, good job security

Organization-related factors

- Organizational stability and job security
- Involved, interested, supportive management
- Proper rewards and recognition of accomplishments
- Stable goals and priorities

Task-related factors

- Clear objectives, directions, and project plans
- Proper technical direction and leadership
- Autonomy and professionally challenging work
- Experienced and qualified project/team personnel
- Team involvement and project visibility

Effective team performance

- Innovative ideas
- Goal(s) accomplished
- Adaptable to change
- High personal/team commitment
- Rated highly by upper management

Source: Reprinted from *Journal of Product Innovation Management*, 7, Hans J. Thamhain, "Managing Technologically Innovative Team Efforts Toward New Product Success," pp. 5-18. Copyright 1990, with permission from Elsevier Science, Inc.

The five criteria for effective team performance in the center of Figure 14.5 parallel the criteria for organizational effectiveness discussed in Chapter 9. Thus, team effectiveness feeds organizational effectiveness. For example, if the Boeing 777 product development teams had not been effective, the entire corporation could have stumbled.

Determinants of team effectiveness, shown in Figure 14.5, are grouped into people-, organization-, and task-related factors. Considered separately, these factors involve rather routine aspects of good management. But the collective picture reveals each factor to be part of a complex and interdependent whole. Managers cannot maximize just a few of them, ignore the rest, and hope to have an effective team. In the spirit of the Japanese concept of *kaizen*, managers and team leaders need to strive for "continuous improvement" on all fronts. Because gains on one front will inevitably be offset by losses in another, the pursuit of team effectiveness and teamwork is an endless battle with no guarantees of success.⁶⁰

Let us focus on trust, one of the people-related factors in Figure 14.5 that can make or break work teams.

trust belief in the integrity, character, or ability of others

8 Explain why trust is a key ingredient of teamwork and discuss what management can do to build trust.

Trust: A Key to Team Effectiveness

Trust, a belief in the integrity, character, or ability of others, is essential if people are to achieve anything together in the long run.⁶¹ Participative management programs are very dependent on trust.⁶² Sadly, trust is not one of the hallmarks of the current U.S. business scene. Back in 1966, 55 percent of Americans had a “great deal of confidence” in major companies. By 1994, that general barometer of trust had plunged to 19 percent.⁶³ By all accounts, the situation has worsened since. This “trust gap,” as *Fortune* magazine labeled it, exists in other developed countries as well. “A 1998 Watson Wyatt Worldwide survey of 2,004 workers in all sectors across Canada concluded that three out of four Canadian employees do not trust the people they work for.”⁶⁴ To a greater extent than they may initially suspect, managers determine the level of trust in the organization and its component work groups and teams.

Zand’s Model of Trust. Trust is not a free-floating variable. It affects, and in turn is affected by, other group processes. Dale E. Zand’s model of work group interaction puts trust into proper perspective (see Figure 14.6). Zand believes that trust is the key to establishing productive interpersonal relationships.⁶⁵

Primary responsibility for creating a climate of trust falls on the manager. Team members usually look to the manager, who enjoys hierarchical advantage and greater access to key information, to set the tone for interpersonal dealings. Threatening or intimidating actions by the manager will probably encourage the group to bind together in cohesive resistance. Therefore, trust needs to be developed right from the beginning, when team members are still receptive to positive managerial influence.

Trust is initially encouraged by a manager’s openness and honesty. Trusting managers talk *with* their people rather than *at* them. A trusting manager, according to Zand’s model, demonstrates a willingness to be influenced by others and to change if the facts show that a change is appropriate. Mutual trust between a manager and team members encourages *self-control*, as opposed to control through direct supervision. Hewlett-Packard, for example, has carefully nurtured an organizational culture based on trust.

*The faith that HP has in its people is conspicuously in evidence in the corporate “open lab stock” policy. . . . The lab stock area is where the electrical and mechanical components are kept. The open lab stock policy means that not only do the engineers have free access to this equipment, but they are actually encouraged to take it home for their personal use!*⁶⁶

HP’s rationale for this trusting policy is that the company will reap innovative returns no matter how the engineers choose to work with the valuable lab equipment.

Paradoxically, managerial control actually expands when committed group or team members enjoy greater freedom in pursuing consensual goals. Those who trust each other generally avoid taking advantage of others’ weaknesses or shortcomings.⁶⁷

Six Ways to Build Trust. Trust is a fragile thing. As most of us know from personal experience, trust grows at a painfully slow pace, yet can be destroyed in an



How to Be a Good Team Facilitator

14H

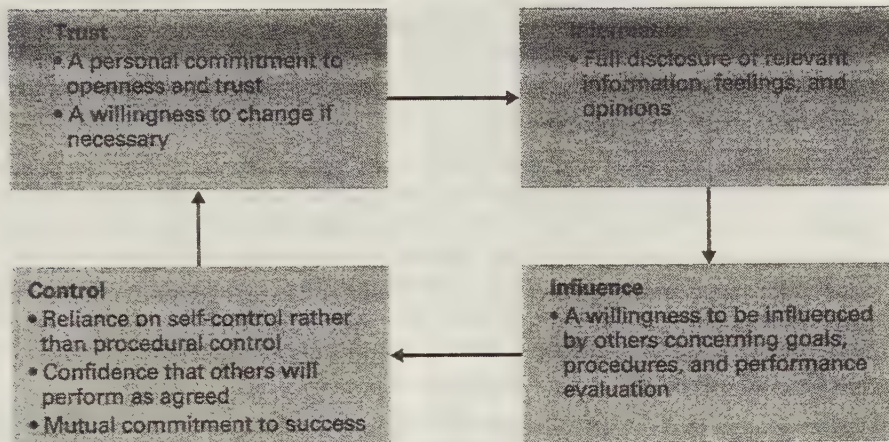
The ability to facilitate comprises a collection of skills. Expert facilitators do the following tasks:

- manage meetings
- help teams agree on clear goals, roles, and procedures
- ensure that all team members contribute
- discourage disruptive behaviors
- manage conflict
- guide teams’ decision-making processes
- communicate clearly with all team members
- observe and accurately interpret group dynamics.

Source: Greg Burns, “The Secrets of Team Facilitation,” *Training & Development*, 49 (June 1995): 46.

Questions: Is it better today to use the term team facilitator rather than team manager or team leader? Why or why not? Which of the above team facilitation skills are the most important to team success? Explain. Which of your team facilitation skills need development. How?

Figure 14.6



Trust and Effective Group Interaction

Source: Reprinted from "Trust and Managerial Problem Solving," by Dale E. Zand and published in *Administrative Science Quarterly*, 17, no. 2 (June 1972) by permission of *Administrative Science Quarterly*. © 1972 by Cornell University.

instant with a thoughtless remark. Mistrust can erode the long-term effectiveness of work teams and organizations. According to management professor and consultant Fernando Bartolomé, managers need to concentrate on six areas: communication, support, respect, fairness, predictability, and competence.

- **Communication:** Keep your people informed by providing accurate and timely feedback and explaining policies and decisions. Be open and honest about your own problems. Do not hoard information or use it as a political device or reward.
- **Support:** Be an approachable person who is available to help, encourage, and coach your people. Show an active interest in their lives and be willing to come to their defense.
- **Respect:** Delegating important duties is the sincerest form of respect, followed closely by being a good listener.
- **Fairness:** Evaluate your people fairly and objectively and be liberal in giving credit and praise.
- **Predictability:** Be dependable and consistent in your behavior and keep all your promises.
- **Competence:** Be a good role model by exercising good business judgment and being technically and professionally competent.⁶⁸

Managers find that trust begets trust. In other words, those who feel they are trusted tend to trust others in return.⁶⁹



Trust Me!

141

Survey of 500 professionals who had quit their jobs:

Nearly 95 percent of the respondents said the primary factor for deciding to leave was whether or not they were able to develop a trusting relationship with their manager.

Survey of 215 executives:

- Trust builders:** Maintain integrity (58 percent)
 Openly communicate vision and values (51 percent)
 Show respect for fellow employees as equal partners (47 percent)
- Trust busters:** Act inconsistently in what they say and do (69 percent)
 Seek personal gain above shared gain (41 percent)
 Withhold information (34 percent)

Sources: "Good Relationship with Boss a Key to Retention," *HRMagazine*, 44 (October 1999): 28; and Jenny C. McCune, "That Elusive Thing Called Trust," *Management Review*, 87 (July–August 1998): 13.

Questions: How important is a trusting relationship with your boss? Explain. What makes you trust (or distrust) your manager? Your coworkers? Your family and friends?

Summary

1. Managers need a working understanding of group dynamics because groups are the basic building blocks of organizations. Both informal (friendship) and formal (work) groups are made up of two or more freely interacting individuals who have a common identity and purpose.
2. After someone has been attracted to a group, cohesiveness—a “we” feeling—encourages continued membership. Roles are social expectations for behavior in a specific position, whereas norms are more general standards for conduct in a given social setting. Norms are enforced because they help the group survive, clarify role expectations, protect self-images, and enhance the group’s identity by emphasizing key values. Compliance with role expectations and norms is rewarded with social reinforcement; noncompliance is punished by criticism, ridicule, and ostracism.
3. Mature groups that are characterized by mutual acceptance, encouragement of minority opinion, and minimal emotional conflict are the product of a developmental process with identifiable stages. During the first three stages—orientation, conflict and challenge, and cohesion—power and authority problems are resolved. Groups are faced with the obstacle of uncertainty over interpersonal relations during the last three stages—delusion, disillusion, and acceptance. Committees have a widespread reputation for inefficiency and ineffectiveness because they tend to get stalled in an early stage of group development.
4. Organizational politics centers on the pursuit of self-interest. Research shows greater political activity to be associated with higher levels of management, larger organizations, staff and marketing personnel, and reorganizations. Political tactics such as posturing, empire building, making the boss look good, collecting and using social IOUs, creating power and loyalty cliques, and destructive competition need to be kept in check if the organization is to be effective.
5. Although a fairly high degree of conformity is necessary if organizations and society in general are to function properly, blind conformity is ultimately dehumanizing and destructive. Research shows that individuals have a strong tendency to bend to the will of the majority, even if the majority is clearly wrong. Cohesive decision-making groups can be victimized by groupthink when unanimity becomes more important than critical evaluation of alternative courses of action.
6. Teams are becoming the structural format of choice. Today’s employees generally have better technical skills than team skills. Cross-functional teams are particularly promising because they enable greater strategic speed. Although members of virtual teams by definition collaborate via electronic media, there is still a need for periodic face-to-face interaction and team building. Three sets of factors—relating to people, organization, and task—combine to determine the effectiveness of a work team.
7. Trust, a key ingredient of effective teamwork, is disturbingly low in the American workplace today. When work group members trust one another, there will be a more active exchange of information, more interpersonal influence, and hence greater self-control. Managers can build trust through communication, support, respect (primarily in the form of delegation), fairness, predictability, and competence.

Terms to Understand

Group (p. 429)	Organizational politics (p. 440)
Informal group (p. 430)	Conformity (p. 443)
Formal group (p. 430)	Groupthink (p. 444)
Cohesiveness (p. 431)	Cross-functional team (p. 446)
Role (p. 432)	Virtual team (p. 447)
Norms (p. 433)	Trust (p. 450)
Ostracism (p. 434)	



How to Use *Cooperative Conflict* to Avoid Groupthink

Skills & Tools

Guides for Action

- Elaborate positions and ideas.
- List facts, information, and theories.
- Ask for clarification.
- Clarify opposing ideas.
- Search for new information.
- Challenge opposing ideas and positions.
- Reaffirm your confidence in those who differ.
- Listen to all ideas.
- Restate opposing arguments that are unclear.
- Identify strengths in opposing arguments.
- Change your mind only when confronted with good evidence.
- Integrate various information and reasoning.
- Create alternative solutions.
- Agree to a solution responsive to several points of view.
- Use a new round of cooperative conflict to develop and refine the solution.

Pitfalls to Avoid

- Assume your position is superior.
- Prove your ideas are right and must be accepted.
- Interpret opposition to your ideas as a personal attack.
- Refuse to admit weaknesses in your position.
- Pretend to listen.
- Ridicule to weaken the others' resolve to disagree.
- Try to win over people to your position through charm and exaggeration.
- See accepting another's ideas as a sign of weakness.

Source: Reprinted from *Learning to Manage Conflict: Getting People to Work Together Productively* by Dean Tjosvold. Copyright © 1993 Dean Tjosvold. First published by Lexington Books. All rights reserved. All correspondence should be sent to Lexington Books, 4720 Boston Way, Lanham, Md., 20706.

Internet Exercises

- 1. What's new with teams and teamwork?** Things are changing rapidly in this area because teams have become such an important part of organizational life. Lots of new ideas can be found on the Internet for those willing to search a bit. Here is a way to jump-start your Web search for updates on teams and teamwork. Go to *Fast Company* magazine's excellent Web site (www.fastcompany.com) and click on the main menu heading "Core Themes." At the themes and ideas page, select the category "Teamwork." Read at least two of the full-text articles, with the goal of picking up at least three good ideas about managing workplace teams. You may have to select and read additional articles if you don't find enough good ideas right away. *Note:* You may want to make hard copies of the articles you selected and notes of your good ideas for possible class discussion.

Learning Points: 1. Why did you select those particular articles? 2. Among your "good ideas" about managing teams, which idea stands out as the best? Why? 3. Did other class members tend to focus on the same (or different) articles and ideas as you? 4. When comparing notes with your classmates, which of their "good ideas" are superior to the ones on your list?

- 2. Getting "street smart" about organizational politics:** Ethical managers today play clean in the game of business but are street smart enough to avoid getting hurt by those who fight dirty. For good background reading, go back to *Fast Company* magazine's home page and click on the main menu heading "Archives." Select the heading "The Archives" and scroll down to the April-May 1998 issue (no. 14). From the table of contents for that issue, select and read the articles titled "The Bad Guy's (and Gal's) Guide to Office Politics" and "The Good Guy's (and Gal's) Guide to Office Politics." While you're in *Fast Company*'s online archives, you may want to search recent issues for articles relating to organizational and office politics.

Learning Points: 1. Why is it fair to say organizational politics can be both good and bad? 2. What new ideas or useful tips did you learn about workplace politics? 3. Is political maneuvering an inescapable part of life on the job? Explain. 4. Is organizational politics a fun (or distasteful) aspect of organizational life for you? Explain. 5. Why is it important to know about political tactics in the workplace even if you don't enjoy engaging in them?

- 3. Check it out:** The Briefings Publishing Group Web site (www.briefings.com) has a section titled "Team Management" containing a regularly updated collection of practical ideas about the exciting area of workplace teams. Be sure to explore the site's other management topics as well.

For updates to these exercises, visit our Web site (www.hmco.com/college).

Closing Case

Thirteen Time Zones Can't Keep Lucent's Virtual Team from Succeeding

Imagine designing the most complex product in your company's history. You need 500 engineers for the job. They will assemble the world's most delicate hardware and write more than a million lines of code. In communicating, the margin for error is minuscule.

Now, scatter those 500 engineers over 13 time zones. Over three continents. Over five states in the United States alone. The Germans schedule to perfection. The Americans work on the fly. In Massachusetts, they go to work early. In New Jersey, they stay late.

Now you have some idea of what Bill Klinger and Frank Polito have been through in the past 18 months. As



top software-development managers in Lucent Technologies' Bell Labs division, they played critical roles in creating a new fiber-optic phone switch called the Bandwidth Manager, which sells for about \$1 million, the kind of global product behind the company's surging earnings. The high-stakes development was Lucent's most complex undertaking by far since its spin-off from AT&T in 1996.

Managing such a far-flung staff ("distributed development," it's called) is possible only because of technology. But as the two Lucent leaders painfully learned, distance still magnifies differences, even in a high-tech age. "You lose informal interaction—going to lunch, the water cooler," Mr. Klinger says. "You can never discount how many issues get solved that way."

The product grew as a hybrid of exotic, widely dispersed technologies: "lightwave" science from Lucent's Merrimack Valley plant, north of Boston, where Mr. Polito works; "cross-connect" products here in New Jersey, where Mr. Klinger works; timing devices from the Netherlands; and optics from Germany.

Development also demanded multiple locations because Lucent wanted a core model as a platform for special versions for foreign and other niche markets. Involving overseas engineers in the flagship product would speed the later development of spin-offs and impress foreign customers.

And rushing to market meant tapping software talent wherever it was available—ultimately at Lucent facilities in Colorado, Illinois, North Carolina, and India. "The scary thing, scary but exciting, was that no one had really pulled this off on this scale before," says Mr. Polito.

Communication technology was the easy part. Lashing together big computers in different cities assured everyone was working on the same up-to-date software version. New project data from one city were instantly available on Web pages everywhere else. Test engineers in India could tweak prototypes in New Jersey. The project never went to sleep.

Technology, however, couldn't conquer cultural problems, especially acute between Messrs. Klinger's and Polito's respective staffs in New Jersey and Massachusetts. Each had its own programming traditions and product histories. Such basic words as "test" could mean different things. A programming chore requiring days in one context might take weeks in another. Differing work schedules and physical distance made each location suspect the other of slacking off. "We had such clashes," says Mr. Klinger.

Personality tests revealed deep geographic differences. Supervisors from the sleek, glass-covered New Jersey office,

principally a research facility abounding in academics, scored as "thinking" people who used cause-and-effect analysis. Those from the old, brick facility in Massachusetts, mainly a manufacturing plant, scored as "feeling" types who based decisions on subjective, human values. Sheer awareness of the differences ("Now I know why you get on my nerves!") began to create common ground.

Amid much cynicism, the two directors hauled their technical managers into team exercises—working in small groups to scale a 14-foot wall and solve puzzles. It's corny, but such methods can accelerate trust building when time is short and the stakes are high. At one point Mr. Klinger asked managers to show up with the product manuals from their previous projects—then, in a ritualistic break from technical parochialism, instructed everyone to tear the covers to pieces.

More than anything else, it was sheer physical presence—face time—that began solidifying the group. Dozens of managers began meeting fortnightly in rotating cities, socializing as much time as their technical discussions permitted. (How better to grow familiar than over hot dogs, beer, and nine innings with the minor league Durham Bulls?) Foreign locations found the direct interaction especially valuable. "Going into the other culture is the only way to understand it," says Sigrid Hauenstein, a Lucent executive in Nuremberg, Germany. "If you don't have a common understanding, it's much more expensive to correct it later."

Eventually the project found its pace. People began wearing beepers to eliminate time wasted on voice-mail tag. Conference calls at varying levels kept everyone in the loop. Staffers posted their photos in the project's Web directory. Many created personal pages. "It's the ultimate democracy of the Web," Mr. Klinger says.

The product is now shipping—on schedule, within budget, and with more technical versatility than Lucent expected. Distributed development "paid off in spades," says Gerry Butters, Lucent optical-networking chief.

Even as it helps build the infrastructure of a digitally connected planet, Lucent is rediscovering the importance of face-to-face interaction. All the bandwidth in the world can convey only a fraction of what we are.

FOR DISCUSSION

1. Which team effectiveness criteria in Figure 14.5 are apparent in this case?
2. How big a problem do you suppose organizational politics was during this project? Explain.
3. What practical lessons does this case teach managers about managing a virtual team?
4. Would you be comfortable working on this sort of global virtual team? Explain.

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Textbook Features

Chapter Objectives

The **chapter objectives** are learning goals for the reading. As in the “Matter and Energy” chapter, the objectives (goals) for the “Group Dynamics and Teamwork” chapter are listed at the beginning and in the margins throughout the chapter.

If you are using objectives or learning goals as a study tool only for yourself (not to submit as an assignment to your instructor), you may want to consider writing less formal responses to check your understanding. Instead of writing complete sentences, you could jot down responses in the form of key phrases or an outline. For example, the first objective listed for the “Group Dynamics and Teamwork” chapter is: Define the term *group*. Your answer might look like this:

4 components of group:

1. 2 or more people
2. members freely interact with each other
3. common identity
4. common purpose

EXERCISE 1

Look at the remaining objectives listed for the “Group Dynamics and Teamwork” chapter and on a separate sheet of paper, write informal responses for each objective.

Key Terms

In this chapter, the **key terms** are not only highlighted with boldface print and then gathered into a list at the end, but they are also briefly defined in the margins.

EXERCISE 2

Create study flashcards by writing each term on one side of a 3 × 5 index card. On the back of the card, write the term’s definition. Review your flashcards frequently to help you memorize the meanings of these terms.

Discussion Questions

Many textbooks will include **discussion questions** to help you understand and apply the concepts presented in a chapter. The “Group Dynamics and Teamwork” chapter includes discussion questions in boxes throughout. Some of these questions relate to a case study presented at the beginning of the chapter to give you opportunities to apply the information you’re learning as you read. If your instructor does not address these questions in class, try to discuss them with a few classmates. At the very least, consider your own answers to help you understand the chapter content.

EXERCISE 3

On a separate sheet of paper, write your answers to the discussion questions in boxes throughout the “Group Dynamics and Teamwork” chapter.

Tips and Techniques: The Reading Process

To get the most from textbooks, understand and practice reading as a **process**. This process has three essential steps:

- STEP 1: PREVIEW
- STEP 2: READ
- STEP 3: REVIEW

Practicing these steps will not only increase your comprehension of the information *as* you read, but they will also improve your retention of that information *after* you read.

Step 1: Preview

During the **preview** step, you prepare your mind to make sense out of the new information by creating a mental framework for it. Construct this framework by doing the following:

- **Get an idea of the chapter’s content that you’ll be reading.** You do this by looking over the chapter’s title and subtitle, the list of learning goals or objectives, the headings throughout the chapter, the marginal information (such as definitions), the graphics (such as charts or photographs), the chapter summary, and the end-of-chapter questions. All of these features will give you a brief preview of the material you’ll be reading.

EXERCISE 4

Preview the “Group Dynamics and Teamwork” chapter. What features did you examine? What did you learn about the content of the chapter?

- **Understand the overall organization of the content.** Having a big picture of the information will help you know how the details fit in while you’re actually reading the chapter. Learn about the chapter’s organization by examining the book’s table of contents. If the book provides a chapter outline, study it before you read. Also, look over the headings throughout the chapter to understand the main ideas and relationships between the sections.

EXERCISE 5

Study the following excerpt from the table of contents of the *Management* textbook:

14 Group Dynamics and Teamwork 415

- **THE CHANGING WORKPLACE:** Teaming Up for Success at Hewlett-Packard, Part 1 416

Fundamental Group Dynamics 417

- What Is a Group? 418
- Types of Groups 418

- **THE GLOBAL MANAGER:** Detroit Reconsiders Japanese-Style Coffee Breaks 420

- Attraction to Groups 421
- Roles 422
- Norms 422

- **MANAGEMENT ETHICS:** A Cop-Turned-Professor Takes Aim at the Code of Silence 424

Group Development 425

- Characteristics of a Mature Group 425
- Six Stages of Group Development 426

Organizational Politics 428

- What Does Organizational Politics Involve? 428
- Research on Organizational Politics 428

- Political Tactics 430
- Antidotes to Political Behavior 431

Conformity and Groupthink 432

- Research on Conformity 432
- Groupthink 433

Teams, Teamwork, and Trust 434

- Cross-Functional Teams 435
- What Makes Workplace Teams Effective? 436
- Trust: A Key to Team Effectiveness 437

Summary 439

Terms to Understand 440

- **SKILLS AND TOOLS:** How to Use Cooperative Conflict to Avoid Groupthink 440

Online Exercises 441

- **CLOSING CASE:** Teaming Up for Success at Hewlett-Packard, Part 2 441

According to this excerpt of the table of contents, what are the five major topics discussed in the “Group Dynamics and Teamwork” chapter? How many topics are covered in the section called “Teams, Teamwork, and Trust”?

- **Think before you read.** We digest new information more easily when we can relate it to what we already know. Therefore, before you read, take a little time to consider your prior knowledge about the topic. Also, think about your own personal experiences that relate to the chapter content you previewed. Writing will clarify your existing ideas and beliefs even more, so you may want to record your thoughts in a reading journal.

EXERCISE 6

In the space below, write at least one paragraph about your ideas, beliefs, and experiences related to group dynamics and teamwork. (You might want to continue writing your paragraph on a separate sheet of paper if there isn't enough space here.)

Step 2: Read

The second step of the reading process is to **read**. However, to read for increased comprehension and retention of information, you must do much more than just passively move your eyes over the words on the page. Instead, read actively. **Active reading** means marking the text with pens and/or highlighters.

What should you mark? First, turn all of the headings in the chapter into questions. In the "Group Dynamics and Teamwork" chapter, for example, you could change the first few headings in into these questions:

What Are the Fundamental Group Dynamics?

What Is a Group? (The authors did this one for you!)

What Are the Types of Groups?

Why Are People Attract[ed] to Groups?

EXERCISE 7

On a separate sheet of paper, transform the remaining headings in the "Group Dynamics and Teamwork" chapter into questions.

After you turn a heading into a question, read the section looking for the answer(s) to that question. When you encounter the answers, mark them by highlighting, underlining, or circling them. However, don't make the mistake of highlighting entire paragraphs. That won't help you quickly and easily see the main ideas when you review the chapter later.

EXERCISE 8

In the section entitled, "Organizational Politics," highlight or underline the answers to the questions you created from the headings.

You may want to add distinctive marking—such as boxes or another highlight color—to key terms within the chapter. This will make them stand out when you review later.

Finally, read with a dictionary close at hand, and always look up definitions of unfamiliar words. If you skip over words you don't know, you may lose important information or misinterpret the author's meaning. Circle each word that you do not know, look it up in your dictionary, and write its definition in the margin of the book's margin.

EXERCISE 9

Read the section entitled “Conformity and Groupthink” in the “Group Dynamics and Teamwork” chapter. Circle all of the words that are new to you, look them up, and write their definitions in the margins. If there is more than one definition for a word, use your understanding of the word’s context within the sentence to determine the appropriate meaning.

Step 3: Review

The third and final step of the reading process is **review**. When you follow reading with review, you’ll reinforce your understanding of the information. Your review should include some or all of the following activities:

- Reread as necessary.
- Answer the study questions or complete the exercises at the end of the chapter.
- Write a summary of the chapter.
- Discuss the chapter with your classmates and/or instructor in or outside of class.
- Outline the chapter.
- Reflect upon what you learned. Determine how you can use the information in your career, in your other courses, and in your personal life. Think about the content that surprised you, corrected your misconceptions, or reinforced information you already knew. Consider recording your reflections in a reading journal.

EXERCISE 10

Reflect upon your reading by writing at least one paragraph (on a separate sheet of paper) about what you gained from the “Group Dynamics and Teamwork” chapter. While reflecting, you might want to consider the following questions: How can you use this information in your career, in your other courses, and/or in your personal life? Did any of the information surprise you? Did the chapter correct any misconceptions you had? Did it reinforce ideas or information you already knew?

EXERCISE 11

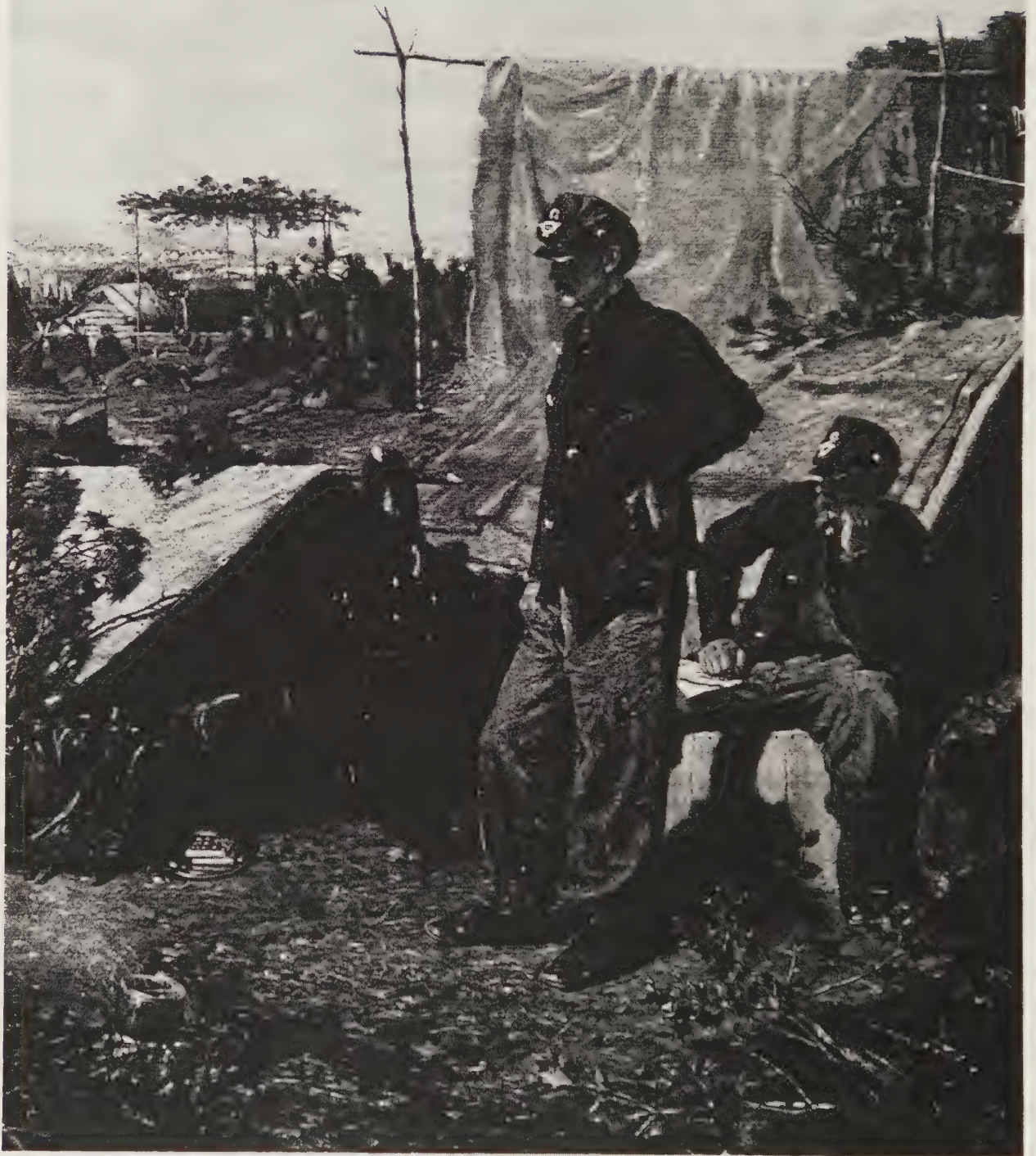
On a separate sheet of paper, write your answers to the Internet exercises at the end of the “Group Dynamics and Teamwork” chapter.

In summary, you may want to think about the entire reading process in terms of the **SQ3R System** created in 1941 by Francis P. Robinson. SQ3R stands for:

SURVEY	Preview the chapter’s content and organization.
QUESTION	Turn headings into questions.
READ	Find answers to the questions.
RECITE	Say (silently or aloud) the answers to the questions.
REVIEW	Periodically go back over the questions to make sure you can still answer them.

PART 5

"Transforming Fire: The Civil War, 1861–1865" from *A People and a Nation*

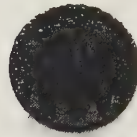


CHAPTER

15

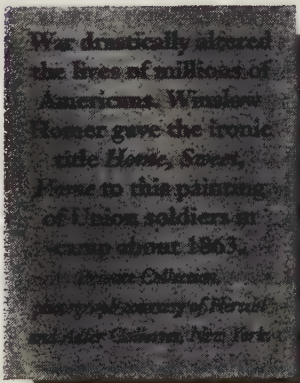
Transforming Fire: The Civil War

1861–1865



He was a living legend. A frontiersman who fought with Andrew Jackson at the Battle of Horseshoe Bend, he had a distinguished career as lawyer, congressman, and governor of Tennessee. But in 1829 he abruptly resigned his governorship and spent the next three years living among the Cherokees. In 1836 he reemerged as commander-in-chief of the armies winning Texan independence. Then he became president of the new Republic of Texas, holding that office twice. After Texas joined the Union, he served fourteen years as United States senator. In 1859 voters in Texas elected him governor. No one in Texas rivaled the reputation or prestige of Sam Houston, yet in March 1861 he was deposed. Why? Houston opposed secession, warned of defeat, refused to take an oath of allegiance to the Confederacy, and challenged the authority of the secession convention. Its members ended his career by declaring his office vacant.

A similar reversal of fortune befell Nathaniel Banks in Texas. Banks had built a distinguished public career in Massachusetts. Hard-working and self-educated, he had risen from bobbin boy in a cotton mill to lawyer, state legislator, congressman, Speaker of the United States House of Representatives, and governor of Massachusetts. When the Civil War began, Banks promptly volunteered to fight and was commissioned a major general. His troops met defeat in Virginia, however, and his reputation was slipping when he arrived on Texas's coast to try to capture the Rio Grande valley. After some success in 1863, a failed offensive along the Red River in 1864 led to scathing criticism and his departure from the military.



The Civil War brought astonishing, unexpected changes not only to Sam Houston and Nathaniel Banks but everywhere in both North and South. For some, wealth changed to poverty and hope to despair; for others, the suffering of war spelled opportunity. Contrasts abounded, between noble and crass motives and between individuals seeking different goals. Even the South's slaves, who hoped that they were witnessing God's "Holy War for liberation," encountered unsympathetic liberators. When a Yankee soldier ransacked a slave woman's cabin, stealing her best quilts, she denounced him as a "nasty, stinkin' rascal" who had betrayed his cause of freedom. Angriily the soldier contradicted her, saying, "I'm fightin' for \$14 a month and the Union."

Northern troops were not the only ones to feel anger over their sacrifice. Impoverished by the war, one southern farmer had endured inflation, taxes, and shortages to support the Confederacy. Then an impressment agent arrived to take still more from him—grain and meat, horses and mules, and wagons. In return, the agent offered only a certificate promising repayment sometime in the future. Bitter and disgusted, the farmer declared, "The sooner this damned Government falls to pieces, the better it will be for us."

Many northern businessmen, however, viewed the economic effects of the war with optimism and anticipation. The conflict ensured vast government expenditures, a heavy demand for goods, and lucrative federal contracts. *Harper's Monthly* reported that an eminent financier expected a long war—the kind of war that would mean huge purchases, paper money, active speculation, and rising prices. "The battle of Bull Run," predicted the financier, "makes the fortune of every man in Wall Street who is not a natural idiot."

For these people and millions of others, the Civil War was a life-changing event. It obliterated the normal patterns and circumstances of life. Millions of men were swept away into training camps and battle units. Armies numbering in the hundreds of thousands marched over the South, devastating once-peaceful countrysides. Families struggled to survive without their men; businesses tried to cope with the loss of workers. Women in both North and South took on extra responsibilities in the home and moved into new jobs in the work force. No sphere of life was untouched.

Change was most drastic in the South, where the leaders of the secession movement had launched a revolution for the purpose of keeping things unchanged. Never were men more mistaken: their rev-

olutionary means were fundamentally incompatible with their conservative purpose. Southern whites had feared that a peacetime government of Republicans would interfere with slavery and upset the routine of plantation life. Instead their own actions led to a war that turned southern life upside down and imperiled the very existence of slavery. Jefferson Davis, president of the Confederate States of America, devised policies more objectionable to the elite than any proposed by President-elect Lincoln. Life in the Confederacy proved to be a shockingly unsouthern experience.

War altered the North as well, but less deeply. Because most of the fighting took place on southern soil, northern farms and factories remained virtually unscathed. The drafting of workers and the changing need for products slowed the pace of industrialization somewhat, but factories and businesses remained busy. Workers lost ground to inflation, but the economy hummed. A new probusiness atmosphere dominated Congress, where the seats of southern representatives were empty. To the alarm of many, the powers of the federal government and of the president increased during the war.

The war created social strains in both North and South. Disaffection was strongest in the Confederacy, where poverty and class resentment fed a lower-class antagonism to the war that threatened the Confederacy from within as federal armies assailed it from without. In the North, dissent also flourished, and antiwar sentiment occasionally erupted into violence.

Ultimately, the Civil War forced on the nation new social and racial arrangements. Its greatest effect was to compel leaders and citizens to deal directly with the issue they had debated and argued over but had been unable to resolve: slavery. This issue, in complex and indirect ways, had given rise to the war. Now the scope and demands of the war forced reluctant Americans to confront it.



"Fighting Means Killing": The War in 1861 and 1862

Few Americans understood what they were getting into when the war began. The onset of hostilities sparked patriotic sentiments, optimistic speeches, and joyous ceremonies in both North and South. Northern communities, large and small, raised companies of volunteers eager to save the Union and sent them off with fanfare (a scene captured in the

• **Important Events** •

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| <p>1861 Battle of Bull Run takes place
General George McClellan organizes Union Army
Union blockade begins
United States Congress passes first confiscation act
<i>Trent</i> affair</p> <p>1862 Union captures Fort Henry and Fort Donelson
United States Navy captures New Orleans
Battle of Shiloh shows the war's destructiveness
Confederacy enacts conscription
General Robert E. Lee thwarts McClellan's offensive on Richmond
United States Congress passes second confiscation act
Confederacy mounts offensive in Maryland and Kentucky
Battle of Antietam ends Lee's drive into Maryland</p> <p>1863 Emancipation Proclamation takes effect
United States Congress passes National Banking Act
Union enacts conscription
African-American soldiers join Union Army
Food riots occur in southern cities
Battle of Chancellorsville ends in Confederate victory but General "Stonewall" Jackson's death
Union wins key victories at Gettysburg and Vicksburg
Draft riots take place in New York City
Battle of Chattanooga leaves South vulnerable to General William T. Sherman's march</p> | <p>1864 Battles of the Wilderness and Spotsylvania produce heavy casualties on both sides in the effort to capture and defend Richmond
Battle of Cold Harbor continues carnage in Virginia
Abraham Lincoln requests Republican Party plank abolishing slavery
General Sherman captures Atlanta
Lincoln wins reelection
Jefferson Davis proposes emancipation within the Confederacy
Sherman marches through Georgia</p> <p>1865 Sherman marches through Carolinas
United States Congress approves Thirteenth Amendment
Hampton Roads Conference
Lee abandons Richmond and Petersburg
Lee surrenders at Appomattox Courthouse
Lincoln assassinated</p> |
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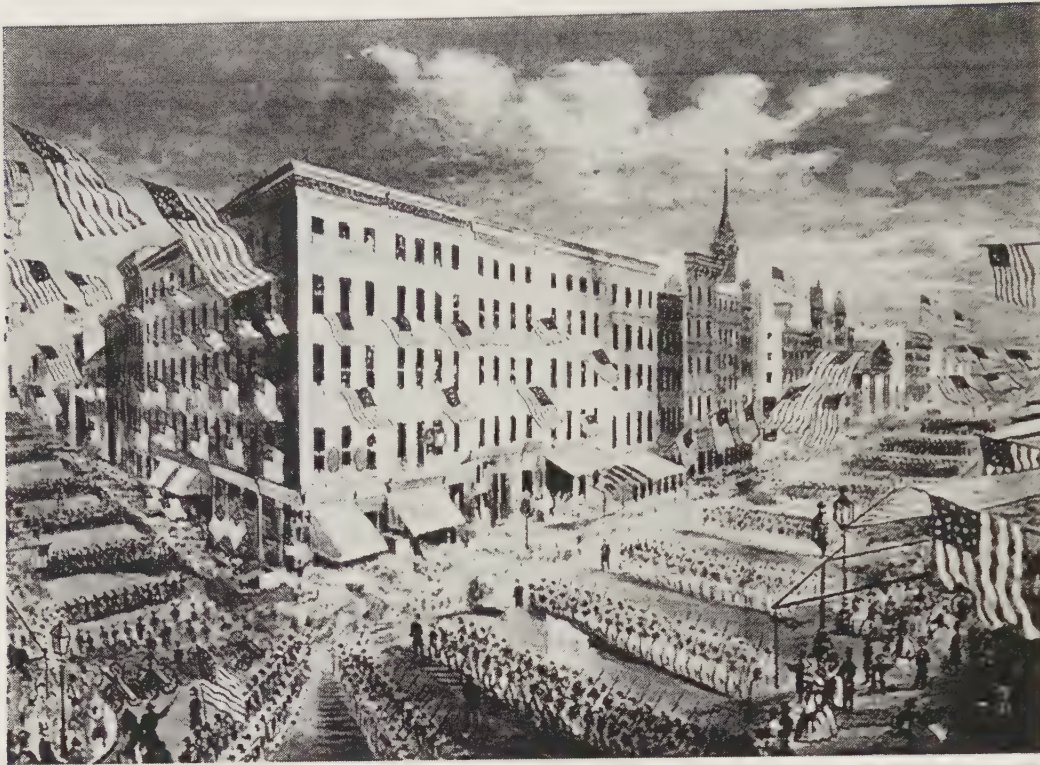
painting *Departure of the Seventh Regiment*). In the South, confident recruits boasted of whipping the Yankees and returning home in time for dinner, and southern women sewed dashing uniforms for men who soon would be lucky to wear drab gray or butternut homespun.

Through the spring of 1861 both sides scrambled to organize and train their inexperienced, undisciplined armies. On July 21, 1861, the first battle took place outside Manassas Junction, Virginia, near a stream called Bull Run. General Irvin McDowell and 30,000 Union troops attacked General

**Battle of
Bull Run**

P. G. T. Beauregard's 22,000 southerners (see map, page 407). As raw recruits struggled amid the confusion of their first battle, federal forces began to gain ground. Then they ran into a line of Virginia troops under General Thomas Jackson. "There is Jackson standing like a stone wall," shouted one Confederate. "Stonewall" Jackson's line held, and the arrival of 9,000 Confederate reinforcements won the day for the South. Union troops fled back to Washington and shocked northern congressmen and spectators, who had watched the battle from a point two miles away, suddenly feared their capital would be taken.

The unexpected rout at Bull Run gave northerners their first hint of the nature of the war to come.



In Departure of the Seventh Regiment (1861), flags and the spectacle of thousands of young men from New York marching off to battle give a deceptively gay appearance to the beginning of the Civil War. Museum of Fine Arts, Boston; M. and M. Karolik Collection.

Victory would not be easy, even though the United States enjoyed an enormous advantage in resources. Pro-Union feeling was growing in western Virginia, and loyalties were divided in the four border slave states—Missouri, Kentucky, Maryland, and Delaware. But the rest of the Upper South had joined the Confederacy. Moved by an outpouring of regional loyalty, half a million southerners volunteered to fight; there were so many would-be soldiers that the Confederate government could not arm them all. The United States therefore undertook a massive buildup of troops in northern Virginia.

Lincoln gave command of the army to General George B. McClellan, an officer who proved to be better at organization and training than at fighting. McClellan devoted the fall and winter of 1861 to readying a formidable force of a quarter-million men whose mission would be to destroy southern forces guarding Richmond, the new Confederate capital.

“The vast preparation of the enemy,” wrote one southern soldier, produced a “feeling of despondency” in the South for the first time.

While McClellan prepared, the Union began to implement other parts of its overall strategy, which called for a blockade of southern ports and eventual capture of the Mississippi River. Like a constricting snake, this “Anaconda plan” would strangle the Confederacy (see map, page 409). At first the Union Navy had too few ships to patrol 3,550 miles of coastline and block the Confederacy’s avenues of commerce and supply. Gradually, however, the navy increased the blockade’s effectiveness, though it never bottled up southern commerce completely.

Confederate strategy was essentially defensive. A defensive posture not only was consistent with the South’s claim that it merely wanted to be left alone, but also took into account the North’s advantage in resources (see figure, page 410). Furthermore, com-

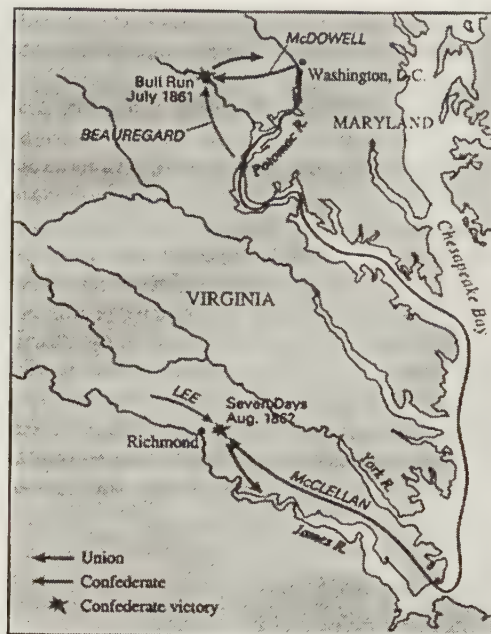
munities all across the South demanded to be defended. Jefferson Davis, however, wisely rejected a static or wholly defensive strategy. The South would pursue an "offensive defensive," taking advantage of opportunities to attack and using its interior lines of transportation to concentrate troops at crucial points.

Strategic thinking on both sides slighted the importance of "the West," that vast expanse of territory between Virginia and the Mississippi River. When the war began, both sides were unprepared for large-scale and sustained operations in the West, but before the end of the war it would prove to be a crucial theater. North and South also shared a fondness for "turning movements," in which an army marched around its opponent to force a withdrawal or unleashed a flank attack in battle. In the Far West, beyond the Mississippi River, the Confederacy hoped to gain an advantage by negotiating treaties with the Creeks, Choctaws, Chickasaws, Cherokees, Seminoles, and smaller tribes of Plains Indians.

The last half of 1861 brought no major land battles, but the North made gains by sea. Late in the summer Union naval forces captured Cape Hatteras and then seized Hilton Head, one of the Sea Islands off Port Royal, South Carolina. A few months later, similar operations secured vital coastal points in North Carolina, as well as Fort Pulaski, which defended Savannah. Federal naval operations were biting into the Confederate coastline (see map, page 409).

The coastal victories off South Carolina foreshadowed major changes in slave society. At the federal gunboats' approach, frightened planters abandoned their lands and fled. Their slaves greeted what they hoped to be freedom with rejoicing and broke the hated cotton gins. Their jubilation and the constantly growing stream of runaways who poured into the Union lines eliminated any doubt about which side slaves would support, given the opportunity. Unwilling at first to wage a war against slavery, the federal government did not acknowledge the slaves' freedom—though it began to use their labor in the Union cause.

The coastal incursions worried southerners, but the spring of 1862 brought even stronger evidence of the war's seriousness. In March two ironclad ships—the *Monitor* (a Union warship) and the *Merri-mack* (a Union ship recycled by the Confederacy)—fought each other for the first time; their battle, though indecisive, ushered in a new era in naval de-



McClellan's Campaign The water route chosen by McClellan to threaten Richmond during the peninsular campaign.

sign. In April Union ships commanded by Admiral David Farragut smashed through log booms blocking the Mississippi River and fought their way upstream to capture New Orleans. Farther west a Union victory at Elkhorn Tavern, Arkansas, shattered Confederate control of Indian Territory. (Thereafter, dissension within Native American groups and a Union victory the following year at Honey Springs, Arkansas, reduced Confederate operations in Indian Territory to guerrilla raids.)

In February 1862 land and river forces in northern Tennessee won significant victories for the Union. A hard-drinking, hitherto unsuccessful general named Ulysses S. Grant saw the strategic importance of Fort Henry and Fort Donelson, the Confederate outposts guarding the Tennessee and Cumberland Rivers. If federal troops could capture these forts, Grant realized, two prime routes into the heartland of the Confederacy would lie open. In just ten days he seized the forts, using his forces so well that he was in a position to demand

Grant's Campaign in Tennessee

unconditional surrender of Fort Donelson's defenders. A path into Tennessee, Alabama, and Mississippi now lay open before the Union Army.

Grant moved on into southern Tennessee and the first of the war's shockingly bloody encounters, the Battle of Shiloh. On April 6, Confederate

Battle of Shiloh

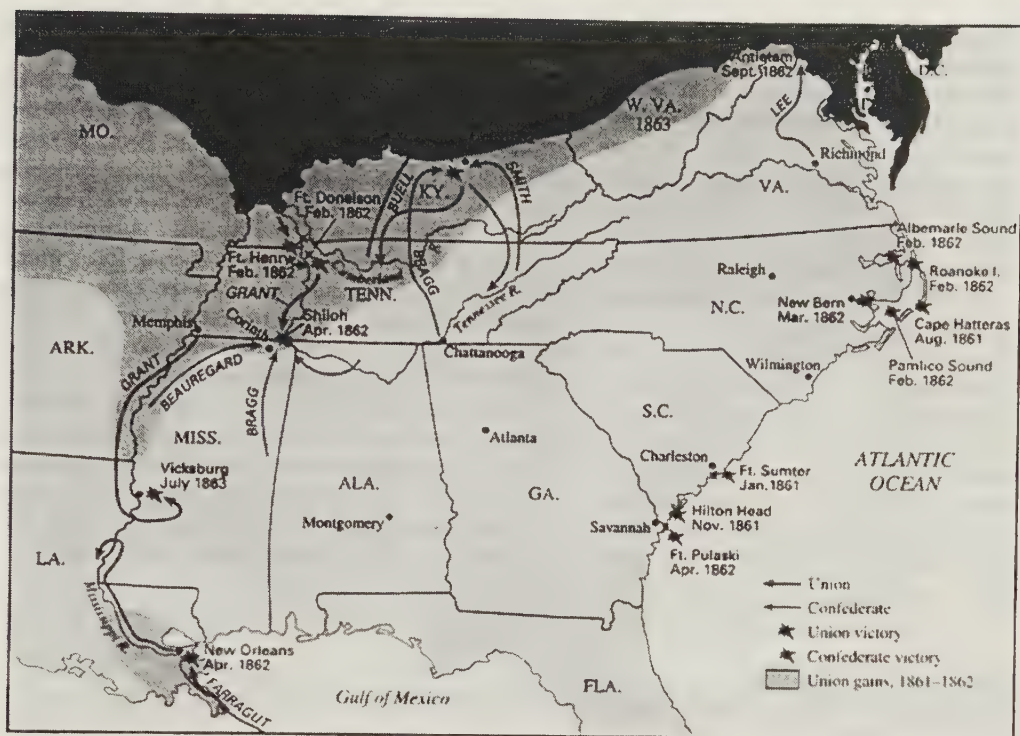
General Albert Sidney Johnston caught federal troops in an undesirable position on the Tennessee River. With their backs to the water, Grant's men were awaiting reinforcements. The Confederates attacked early in the morning and inflicted heavy damage all day. Close to victory, General Johnston was struck and killed by a ball that severed an artery in his thigh. Southern forces almost achieved a breakthrough, but Union reinforcements arrived that night. The next day the tide of

battle turned, and after ten hours of heavy combat, Grant's men forced the Confederates to withdraw. Neither side won a victory, yet the losses were staggering. Northern troops lost 13,000 men (killed, wounded, or captured) out of 63,000; southerners sacrificed 11,000 out of 40,000. Total casualties in this single battle exceeded those in all three of America's previous wars combined. Now both sides were beginning to sense the true nature of the war. Shiloh utterly changed Grant's thinking about it. He had hoped that southerners soon would be "heartily tired" of the conflict. After Shiloh, he recalled, "I gave up all idea of saving the Union except by complete conquest."

Meanwhile, on the Virginia front, President Lincoln had a different problem. Conquest was impossible without battles, but General McClellan seemed



Both armies experienced religious revivals during the war. This photograph shows members of a largely Irish regiment from New York celebrating Mass at the beginning of the war. Notice the presence of some female visitors in the left foreground. Library of Congress.



Anaconda Plan An overview of the Union's "Anaconda Plan" and key battles on the coast and in the West, 1861-1863.

unwilling to fight. Only thirty-six, McClellan had already achieved notable success as an army officer and railroad president. Keenly aware of his historic role, he did not want to fail and insisted on having everything in order before he attacked. Habitually overestimating the size of enemy forces, McClellan called repeatedly for reinforcements and ignored Lincoln's directions to advance. Finally McClellan chose to move by a roundabout water route, sailing his troops around the York peninsula and advancing on Richmond from the east (see map, page 407).

By June the sheer size of the federal armies outside the Confederacy's capital was highly threatening. But southern leaders foiled McClellan's legions. First, Stonewall Jackson moved north into the Shenandoah valley behind Union forces and threatened Washington, D.C., drawing some of the federal troops away from Richmond to protect their own capital. Then, in a series of engagements known as the Seven Days Battles, Confederate general Robert E. Lee struck at McClellan's army. Lee never man-

aged to close his pincers around the retreating Union forces, but on August 3 McClellan withdrew to the Potomac. Richmond remained safe for almost two more years.

Buoyed by these results, Jefferson Davis conceived an ambitious plan to turn the tide of the war and gain recognition of the Confederacy by European nations. He ordered a general offensive, sending Lee north into Maryland and Generals Kirby Smith and Braxton Bragg into Kentucky. Calling on residents of Maryland and Kentucky to make a separate peace with his government, Davis also invited northwestern states like Indiana, which sent much of their trade down the Mississippi to New Orleans, to leave the Union.

The plan was promising, but every part of the offensive failed. In the bloodiest day of the entire war, September 17, 1862, McClellan turned Lee back

Confederate Offensive in Maryland and Kentucky

from Sharpsburg, Maryland. In the Battle of Antietam 5,000 men died (3,500 had died at Shiloh), and another 18,000 were wounded. Lee was lucky to escape destruction, for McClellan had obtained a copy of Lee's marching orders. But McClellan moved slowly, failed to use his larger forces in simultaneous attacks all along the line, and allowed Lee's stricken army to retreat to safety across the Potomac. In Kentucky Generals Smith and Bragg had to withdraw just one day after Bragg attended the inauguration of a provisional Confederate governor.

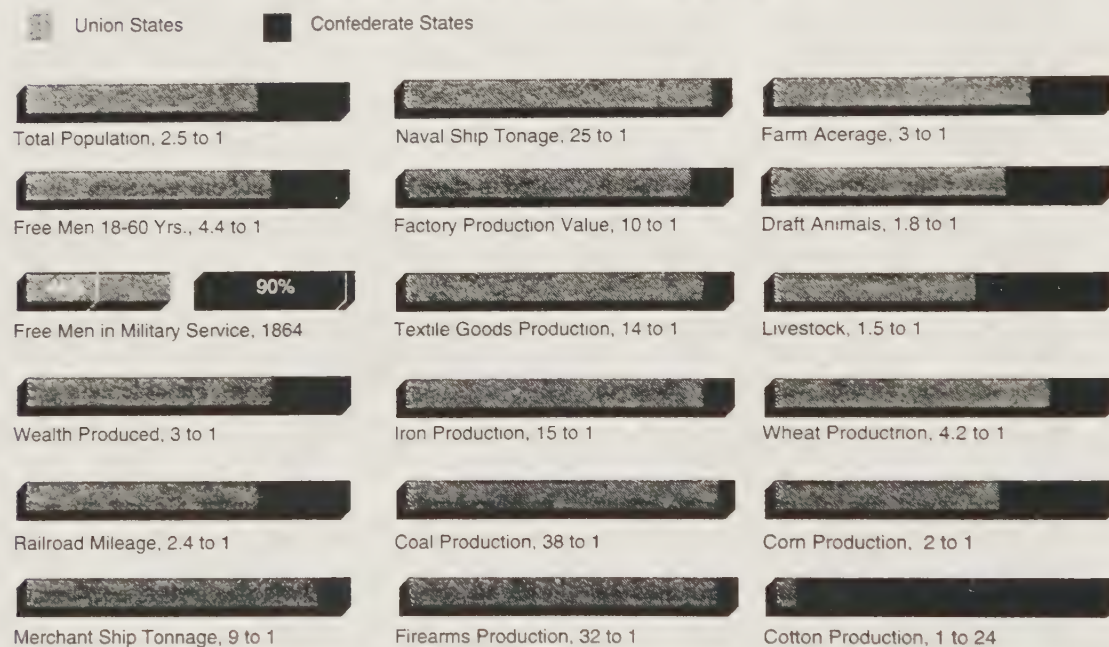
Confederate leaders had marshaled all their strength for a breakthrough but had failed. Outnumbered and disadvantaged in resources, the South could not continue the offensive. Profoundly disappointed, Davis admitted to a committee of Confederate representatives that southerners were entering "the darkest and most dangerous period we have yet had." Tenacious defense and stoic endurance now

seemed the South's only long-range hope. Perceptive southerners shared their president's despair.

But 1862 also brought painful lessons to the North. Confederate General James E. B. (Jeb) Stuart executed a daring cavalry raid into Pennsylvania in October. Then on December 13 Union general Ambrose Burnside unwisely ordered his soldiers to attack Lee's army, which held fortified positions on high ground at Fredericksburg, Virginia. Lee's men performed so coolly and controlled the engagement so thoroughly that Lee, a restrained and humane man, was moved to say, "It is well that war is so terrible. We should grow too fond of it."

The rebellion was far from being suppressed. Although the North had large reserves, it was learning just how high were the costs of the war. Both sides would have to pay a terrible price. As Confederate cavalry leader Nathan Bedford Forrest put it, "War means fighting. And fighting means killing."

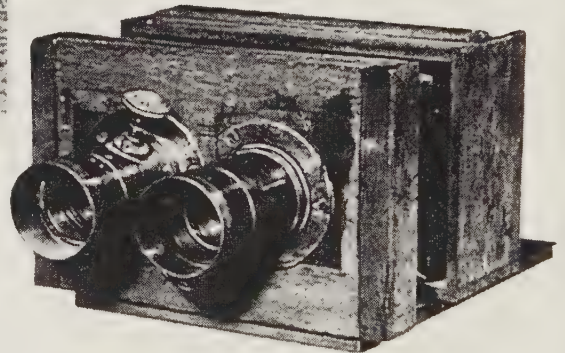
Comparative Resources, Union and Confederate States, 1861



Comparative Resources, Union and Confederate States, 1861 *The North had vastly superior resources. Although the North's advantages in manpower and industrial capacity proved very important, the South could not really be conquered until it chose to give up the fight.* Source: From *The Times Atlas of World History*. Time Books, London, 1978. Used with permission.



In October 1862 in New York City, photographer Matthew Brady opened an exhibition of photographs from the Battle of Antietam. The camera, whose modern form had been invented only in 1826, made war's carnage hideously real. Although few knew it, Brady's vision was very poor, and this photograph of Confederate dead was actually made by his assistants, Alexander Gardner and James F. Gibson. Confederate dead: Library of Congress; camera: George Eastman House Collection.



War Transforms the South

Even more than the fighting itself, disruptions in civilian life robbed southerners of their gaiety and nonchalance. The war altered southern society beyond all expectations and with astonishing speed. One of the first traditions to fall was the southern preference for local government. The South had been characterized by limited government. States' rights had been its motto, but by modern standards even the state governments were weak and sketchy affairs. The average citizen, on whom the hand of government had rested lightly, probably knew county authorities best. To withstand the massive power of the North, however, the South needed to centralize;

like the colonial revolutionaries, southerners faced a choice of join or die. No one saw the necessity of centralization more clearly than Jefferson Davis. If the states of the Confederacy insisted on fighting separately, said Davis, "we had better make terms as soon as we can."

Promptly Davis moved to bring all arms, supplies, and troops under his control. But by early 1862 the scope and duration of the conflict required something more. Tens of thousands of Confederate soldiers had volunteered for just one year's service, planning to return home in the spring to plant their crops. To keep southern armies in the

Confederacy Resorts to a Draft

field, the War Department encouraged reenlistments and called for new volunteers. However, as one official admitted, “the spirit of volunteering had died out.” Three states threatened or instituted a draft. Finally, faced with a critical shortage of troops, in April 1862 the Confederate government enacted the first national conscription (draft) law in American history. Thus the war forced unprecedented change on states that had seceded out of fear of change.

Though Jefferson Davis was careful to observe the Confederate constitution, he was a strong chief executive. He adopted a firm leadership role toward

Centralization of Power

the Confederate Congress, which raised taxes and later passed a tax-in-kind—a tax paid in farm products. Almost three thousand agents dispersed to collect the tax, assisted by almost fifteen hundred appraisers. Where opposition arose, the government suspended the writ of habeas corpus (which prevented individuals from being held without trial) and imposed martial law. In the face of political opposition that cherished states’ rights, Davis proved unyielding.

To replace the food that men in uniform would have grown, Davis exhorted farmers to switch from cash crops to food crops; he encouraged the states to require them to do so. But the army remained short of food and labor. In emergencies the War Department resorted to impressing slaves to work on fortifications, and after 1861 the government relied heavily on confiscation of food to feed the troops. Officers swooped down on farms in the line of march and carted away grain, meat, wagons, and draft animals.

Soon the Confederate administration in Richmond was exercising virtually complete control over the southern economy. Because it controlled the supply of labor through conscription, the administration could compel industry to work on government contracts and supply the military’s needs. The Confederate Congress also gave the central government almost complete control of the railroads; in 1864 shipping, too, came under extensive regulation. New statutes even limited corporate profits and dividends. A large bureaucracy sprang up to administer these operations: over seventy thousand civilians staffed the Confederate administration. By the war’s end, the southern bureaucracy was larger in proportion to population than its northern counterpart.

Clerks and subordinate officials crowded the towns and cities where Confederate departments had their offices. The sudden population booms that

Effects of War on Southern Cities and Industry

resulted overwhelmed the housing supply and stimulated new construction. The pressure was especially great in Richmond, whose population increased 250 percent. Before the war’s end, Confederate officials were planning the relocation of entire departments to lessen crowding in Richmond. Mobile’s population jumped from 29,000 to 41,000; Atlanta began to grow; and 10,000 people poured into war-related industries in little Selma, Alabama.

Another prime cause of urban growth in the South was industrialization. The Union blockade disrupted imports of manufactured products and caused the traditionally agricultural South to become interested in industry. Davis exulted that manufacturing was making the South “more and more independent of the rest of the world.” Many planters shared his hope that industrialization would bring “deliverance, full and unrestricted, from all commercial dependence” on the North. Indeed, beginning almost from scratch, the Confederacy achieved tremendous feats of industrial development. Chief of Ordnance Josiah Gorgas increased the capacity of Richmond’s Tredegar Iron Works and other factories to the point that by 1865 his Ordnance Bureau was supplying all Confederate small arms and ammunition. Meanwhile, the government constructed new railroad lines to improve the efficiency of the South’s transportation system.

Southerners adopted new ways in response to these changes. Women, restricted to narrow roles in antebellum society, gained substantial new responsibilities. The wives and mothers

Change in the Role of Southern Women

of soldiers now headed households and performed men’s work, adding to their traditional chores the tasks of raising crops and tending animals. Women in non-slaveowning families cultivated fields themselves, while wealthier women suddenly had to manage field hands unaccustomed to female overseers. Only the very rich had enough servants to allow a woman’s routine to continue undisturbed. In the cities, white women—who had been virtually excluded from the labor force—found a limited number of respectable new paying jobs. Clerks had always been males, but the war changed that, too. “Government girls” staffed the Confederate bureaucracy, and female schoolteachers became commonplace in the South for the first time.

Some women gained confidence from their new responsibilities. Among these was Janie Smith, a young North Carolinian. Raised in a rural area by prosperous parents, she had faced few challenges or grim realities before the war reached her farm and troops turned her home into a hospital. "It makes me shudder when I think of the awful sights I witnessed that morning," she wrote to a friend. "Ambulance after ambulance drove up with our wounded. . . . Under every shed and tree, the tables were carried for amputating the limbs. . . . The blood lay in puddles in the grove; the groans of the dying and complaints of those undergoing amputation were horrible." But Janie Smith learned to cope with crisis. She ended her account with the proud words, "I can dress amputated limbs now and do most anything in the way of nursing wounded soldiers."

Patriotic sacrifice appealed to some women, but others resented their new burdens. Many among the wealthy found their new tasks difficult and their changed situation distasteful. North Carolina diarist Catherine Devereux Edmondston was enthusiastic for the southern cause but wanted her husband to remain at home. A Texas woman who had struggled to discipline slaves pronounced herself "sick of trying to do a man's business." Others grew angry over shortages and resented cooking and unfamiliar contact with lower-class women.

Yet the Confederate experience produced some new values. Legislative bodies yielded power to the executive branch of government, which could act more decisively in time of war. Achievement and bravery under fire began to take precedence over aristocratic lineage. Men such as Josiah Gorgas, Stonewall Jackson, and Nathan Bedford Forrest gained renown by distinguishing themselves in industry and on the battlefield.

For millions of ordinary southerners, however, change brought privation and suffering. Mass poverty descended for the first time on a large minority of the white population. Many yeoman families had lost their breadwinners to the army. As a South Carolina newspaper put it, "The duties of war have called away from home the sole supports of many, many families. . . . Help must be given, or the poor will suffer." The poor sought help from relatives, neighbors, friends, anyone. Sometimes they pleaded their cases to the Confederate government. "In the name of humanity," begged one woman, "discharge my husband he is not able to do your government much

Human Suffering



This Confederate soldier, like thousands of his comrades, took advantage of an opportunity to pose with his wife and brother. As the death toll mounted and suffering increased, southern women grew less willing to urge their men into battle. Collection of Larry Williford.

good and he might do his children some good . . . my poor children have no home nor no Father."

Other factors aggravated the effect of the labor shortage. The South was in many places so sparsely populated that the conscription of one skilled craftsman could work a hardship on the people of an entire county. Often they begged in unison for the exemption or discharge of the local miller or the neighborhood tanner, wheelwright, or potter. Physicians also were in short supply. Most serious, however, was the loss of a blacksmith. As a petition from Alabama explained, "our Section of County [is] left entirely Destitute of any man that is able to keep in order any kind of Farming Tules."

The blockade of Confederate shipping created shortages of common but important items—salt, sugar, coffee, nails—and speculation and hoarding made the shortages worse. Greedy businessmen cornered the supply of some commodities; prosperous citizens stocked up on food. The *Richmond Enquirer* criticized one man for hoarding

Hoarding and Runaway Inflation

seven hundred barrels of flour; another man, a planter, purchased so many wagonloads of supplies that his “lawn and paths looked like a wharf covered with a ship’s loads.” “This disposition to speculate upon the yeomanry of the country,” lamented the *Richmond Examiner*, “is the most mortifying feature of the war.” North Carolina’s Governor Zebulon Vance worried about “the cry of distress . . . from the poor wives and children of our soldiers. . . . What will become of them?”

Inflation raged out of control, fueled by the Confederate government’s heavy borrowing and inadequate taxes, until prices had increased almost 7,000 percent. Inflation particularly imperiled urban dwellers and the many who could no longer provide for themselves. As early as 1861 and 1862, newspapers reported that “want and starvation are staring thousands in the face,” and troubled officials predicted that “women and children are bound to come to suffering if not starvation.” Some concerned citizens tried to help. “Free markets,” which disbursed goods as charity, sprang up in various cities. Some families came to the aid of their neighbors. But other people would not cooperate: “It is folly for a poor mother to call on the rich people about here,” raged one woman. “Their hearts are of steel they would sooner throw what they have to spare to the dogs than give it to a starving child.” The need was so vast that it overwhelmed private charity. A rudimentary relief program organized by the Confederacy offered hope but was soon curtailed to supply the armies. Thus southern yeomen sank into poverty and suffering.

As their fortunes declined, people of once-modest means looked around and found abundant evidence that all classes were not sacrificing equally.

Inequities of the Confederate Draft

They saw that the wealthy gave up only their luxuries, while many poor families went without necessities. And they noted that the Confederate government contributed to these inequities through policies that favored the upper class.

Until the last year of the war, for example, prosperous southerners could avoid military service by hiring substitutes. Prices for substitutes skyrocketed until it cost a man \$5,000 or \$6,000 to send someone to the front in his place. Well over 50,000 upper-class southerners purchased such substitutes. South Carolina’s Mary Boykin Chesnut knew of one young aristocrat who “spent a fortune in substitutes. Two have been taken from

him [when *they* were conscripted], and two he paid to change with him when he was ordered to the front. He is at the end of his row now, for all able-bodied men are ordered to the front. I hear he is going as some general’s courier.” As Chesnut’s last remark indicates, the rich also traded on their social connections to avoid danger. “It is a notorious fact,” complained an angry Georgian, that “if a man has influential friends—or a little money to spare he will never be enrolled.” A Confederate senator from Mississippi, James Phelan, informed Jefferson Davis that apparently “nine tenths of the youngsters of the land whose relatives are conspicuous in society, wealthy, or influential obtain some safe perch where they can doze with their heads under their wings.”

Anger at such discrimination exploded in October 1862 when the Confederate Congress exempted from military duty anyone who was supervising at least twenty slaves. “Never did a law meet with more universal odium,” observed one representative. “Its influence upon the poor is most calamitous.” Protests poured in from every corner of the Confederacy, and North Carolina’s legislators formally condemned the law. Its defenders argued, however, that the exemption preserved order and aided food production, and the statute remained on the books.

Dissension spread as growing numbers of citizens concluded that the struggle was “a rich man’s war and a poor man’s fight.” Alert politicians and newspaper editors warned that class resentment was building to a dangerous level. The bitterness of letters to Confederate officials during this period suggests the depth of the people’s anger. “If I and my little children suffer [and] die while there Father is in service,” threatened one woman, “I invoke God Almighty that our blood rest upon the South.” Another woman swore to the secretary of war that unless help was provided to poverty-stricken wives and mothers “an allwise god . . . will send down his fury and judgment in a very grate manar . . . [on] those that are in power.” War was magnifying social tensions in the Confederacy.



The Northern Economy Copes with War

With the onset of war, a tidal wave of change rolled over the North as well. Factories and citizens’ associations geared up to support the war, and the federal government and its executive branch gained new powers. The energies of an industrializing, cap-



Despite initial problems, the task of supplying a vast war machine kept the northern economy humming. This photograph shows businesses on the west side of Hudson Street in New York City in 1865. New-York Historical Society.

italist society were harnessed to serve the cause of the Union. Idealism and greed flourished together, and the northern economy proved its awesome productivity. Northern factories ran overtime, and unemployment was low. The war did not destroy the North's prosperity. Northern farms and factories came through the war unharmed, whereas most of the South suffered extensive damage. To Union soldiers on the battlefield, sacrifice was a grim reality, but northern civilians experienced only the bustle and energy of wartime production.

At first the war was a shock to business. Northern firms lost their southern markets, and many companies had to change their products and find new customers in order to remain open. Southern debts became uncollectible, jeopardizing not only northern merchants but also many western banks. In farming regions, families struggled with an aggravated shortage of labor. A few enterprises never pulled out of the tailspin caused by the war.

Initial Slump in Northern Business

Cotton mills lacked cotton; construction declined; shoe manufacturers sold few of the cheap shoes that planters had bought for their slaves.

Overall the war slowed the pace of industrialization in the North, but its economic impact was not all negative. Certain entrepreneurs, such as wool producers, benefited from shortages of competing products, and soaring demand for war-related goods swept some businesses to new heights of production. To feed the hungry war machine, the federal government pumped unprecedented sums into the economy. The Treasury issued \$3.2 billion in bonds and paper money called greenbacks, and the War Department spent over \$360 million in revenues from new taxes (including a broad excise tax and the nation's first income tax). Government contracts soon totaled more than \$1 billion.

Secretary of War Edwin M. Stanton's list of the supplies needed by the Ordnance Department indicates the scope of government demand: "7,892 cannon, 11,787 artillery carriages, 4,022,130 small-arms, . . . 1,022,176,474 cartridges for small-arms,

1,220,555,435 percussion caps, . . . 26,440,054 pounds of gunpowder, 6,395,152 pounds of niter, and 90,416,295 pounds of lead.” Stanton’s list covered only weapons; the government also purchased huge quantities of uniforms, boots, food, camp equipment, saddles, ships, and other necessities. War-related spending revived business in many northern states. In 1863, a merchants’ magazine examined the effects of the war in Massachusetts: “Seldom, if ever, has the business of Massachusetts been more active or profitable than during the past year. . . . In every department of labor the government has been, directly or indirectly, the chief employer and paymaster.” Government contracts had a particularly beneficial impact on the state’s wool, metal, and shipbuilding industries, and also saved Massachusetts shoe manufacturers from ruin.

Nothing illustrated the wartime partnership between business and government better than the work of Jay Cooke, a wealthy New York financier. Cooke threw himself into the marketing of government bonds to finance the war effort. With great imagination and energy, he convinced both large investors and ordinary citizens to invest enormous sums in the war effort, in the process earning hefty commissions for himself. But the financier’s profit served the Union cause, as the interests of capitalism and government, finance and patriotism, merged. The booming economy, the Republican alliance with business, and the frantic wartime activity combined to create a new atmosphere in Washington. The notion spread that government should aid businessmen and not interfere with them. Noting the favorable atmosphere, railroad builders and industrialists—men such as Leland Stanford, Collis P. Huntington, John D. Rockefeller, John M. Forbes, and Jay Gould—took advantage of it. Their enterprises grew with the aid of government loans, grants, and tariffs.

War production aided some heavy industries in the North. Coal output rose substantially. Iron makers improved the quality of their product while boosting the production of pig iron from 920,000 tons in 1860 to 1.1 million tons in 1864. Foundries developed new and less expensive ways to make steel. Although new railroad construction slowed, repairs helped the manufacture of rails to increase. Of considerable significance for the future was the railroad industry’s adoption of a standard gauge (width) for

track, which eliminated the unloading and reloading of boxcars and created a unified transportation system.

Another strength of the northern economy was the complementary relationship between agriculture and industry. Mechanization of agriculture had begun before the war. Wartime recruitment and conscription, however, gave western farmers an added incentive to purchase labor-saving machinery. The shift from human labor to machines created new markets for the urban industrial work force. The boom in the sale of agricultural tools was tremendous. Cyrus and William McCormick built an industrial empire in Chicago from the sale of their reapers. Between 1862 and 1864 the manufacture of mowers and reapers doubled to 70,000 yearly; even so, manufacturers could not satisfy the demand. By the end of the war, 375,000 reapers were in use, triple the number in 1861. Large-scale commercial agriculture had become a reality. As a result, northern farm families whose breadwinners went to war did not suffer as their counterparts did in the South. “We have seen,” one magazine observed, “a stout matron whose sons are in the army, cutting hay with her team . . . and she cut seven acres with ease in a day, riding leisurely upon her cutter.”

Northern industrial and urban workers did not fare as well. After the initial slump, jobs became plentiful, but inflation ate up much of a worker’s paycheck. By 1863 9-cent-a-pound beef cost 18 cents. The price of coffee had tripled; rice and sugar had doubled; and clothing, fuel, and rent had all climbed. Between 1860 and 1864 consumer prices rose at least 76 percent, while daily wages rose only 42 percent. Workers’ families consequently suffered a substantial decline in their standard of living.

As their real wages shrank, industrial workers lost job security. To increase production, some employers were replacing workers with labor-saving

New Militancy Among Northern Workers

machines. Other employers urged the government to promote immigration so they could import cheap labor. Workers responded by forming unions and sometimes by striking. Skilled craftsmen organized to combat the loss

of their jobs and status to machines; women and unskilled workers, excluded by the craftsmen, formed their own unions. In recognition of the increasingly national scope of business activity, thirteen occupational groups—including tailors, coal miners, and

Effects of War on Northern Industry and Agriculture

railway engineers—formed national unions during the Civil War. Because of the tight labor market, unions won many of their demands without striking, but the number of strikes also rose steadily.

Employers reacted with hostility to this new spirit among workers—a spirit that William H. Sylvie, leader of the iron molders, called a “feeling of manly independence.” Manufacturers viewed labor activism as a threat to their property rights and freedom of action, and accordingly formed statewide or craft-based associations to cooperate and pool information. These employers shared blacklists of union members and required new workers to sign “yellow dog” contracts (promises not to join a union). To put down strikes, they hired strikebreakers from the ranks of the poor and desperate—blacks, immigrants, and women—and sometimes received additional help from federal troops.

Troublesome as unions were, they did not prevent many employers from making a profit. The highest profits were made from profiteering on government contracts. Unscrupulous businessmen took advantage of the suddenly immense demand for army supplies by selling clothing and blankets made of “shoddy”—wool fibers reclaimed from rags or worn cloth. Shoddy goods often came apart in the rain; most of the shoes purchased in the early months of the war were worthless, too. Contractors sold inferior guns for double the usual price and passed off tainted meat as good. Corruption was so widespread that it led to a year-long investigation by the House of Representatives. A group of contractors that had demanded \$50 million for their products dropped their claims to \$17 million as a result of the findings of the investigation.

Legitimate enterprises also made healthy profits. The output of woolen mills increased so dramatically that dividends in the industry nearly tripled.

Some cotton mills made record profits on what they sold, even though they reduced their output. Brokerage houses worked until midnight and earned unheard-of commissions. Railroads carried immense quantities of freight and passengers, increasing their business to the point that railroad stocks doubled or even tripled in value. The price of Erie Railroad stock rose from \$17 to \$126 a share during the war.

Railroads also were a leading beneficiary of government largesse. Congress had failed in the 1850s

to resolve the question of a northern versus a southern route for the first transcontinental railroad. With the South absent from Congress, the northern route quickly prevailed. In 1862 and 1864 Congress chartered two corporations, the Union Pacific Railroad and the Central Pacific Railroad, and assisted them financially in connecting Omaha, Nebraska, with Sacramento, California. For each mile of track laid, the railroads received a loan of from \$16,000 to \$48,000 in government bonds plus 20 square miles of land along a free 400-foot-wide right of way. Overall, the two corporations gained approximately 20 million acres of land and nearly \$60 million in loans.

Other businessmen benefited handsomely from the Morrill Land Grant Act (1862). To promote public education in agriculture, engineering, and military

science, Congress granted each state 30,000 acres of federal land for each of its congressional districts. The states could sell the land, as long as they used the in-

come for the purposes Congress had intended. The law eventually fostered sixty-nine colleges and universities, but one of its immediate effects was to enrich a few prominent speculators. Hard-pressed to meet wartime expenses, some states sold their land cheaply to wealthy entrepreneurs. For example, Ezra Cornell, a leader in the telegraph industry, invested in 500,000 acres in the Midwest.

Higher tariffs also pleased many businessmen. Northern businesses did not uniformly favor high import duties; some manufacturers desired cheap imported raw materials more than they feared foreign competition. But northeastern congressmen traditionally supported higher tariffs, and after southern lawmakers left Washington, they had their way: the Tariff Act of 1864 raised tariffs generously. According to one scholar, manufacturers had only to mention the rate they considered necessary and that rate was declared. Some healthy industries earned artificially high profits by raising their prices to a level just below that of the foreign competition. By the end of the war, tariff increases averaged 47 percent, and rates were more than double those of 1857.



Wartime Society in the North

The outbreak of war stimulated patriotism in the North just as it initially had done in the South. Northern society, which had suffered the stresses

Wartime Benefits to Northern Business

Some cotton mills made record profits on what they sold, even though they reduced their output. Brokerage houses worked until midnight and earned unheard-of commissions. Railroads carried immense quantities of

associated with industrialization, immigration, and widespread social change, found a unifying cause in the preservation of the nation and the American form of government. In thousands of self-governing towns and communities, northern citizens felt a personal connection to representative government. Secession threatened to destroy their system, and northerners rallied to its defense. Secular and church leaders supported the cause, and even ministers who preferred to separate politics and pulpit denounced “the iniquity of causeless rebellion.”

Such enthusiasm proved useful as northerners encountered a multitude of wartime changes. The powers of the federal government and the president grew steadily during the crisis.

Expanded Powers of the United States President

Abraham Lincoln, like Jefferson Davis, found that war required active presidential leadership. At the beginning of the conflict, Lincoln launched a major shipbuilding program without waiting for

Congress to assemble. The lawmakers later approved his decision, and Lincoln continued to act in advance of Congress when he deemed such action necessary. In one striking exercise of executive power, Lincoln suspended the writ of habeas corpus for everyone living between Washington D.C., and Philadelphia. There was scant legal justification for this act, but the president’s motive was practical: to ensure the loyalty of Maryland. Later in the war, with congressional approval, Lincoln repeatedly suspended habeas corpus and invoked martial law, mainly in the border states but elsewhere as well. Between fifteen and twenty thousand United States citizens were arrested on suspicion of disloyal acts.

On occasion Lincoln used his wartime authority to bolster his own political fortunes. He and his generals proved adept at furloughing soldiers so they could vote in close elections; those whom Lincoln furloughed, of course, usually voted Republican. He also came to the aid of other officeholders in his party. When the Republican governor of Indiana, who was battling propeace Democrats in his legislature, ran short of funds, Lincoln had the War Department supply \$250,000. This procedure lacked constitutional sanction, but it advanced the Union cause.

Among the clearest examples of the wartime expansion of federal authority were the National Banking Acts of 1863, 1864, and 1865. Before the Civil War, the nation lacked a uniform currency, for the federal government had never exercised its authority in this area. Banks operating under state charters issued

no fewer than seven thousand different kinds of notes, which were difficult to distinguish from a variety of forgeries. On the recommendation of Secretary of the Treasury Salmon Chase, Congress established a national banking system empowered to issue national bank notes. At the close of the war in 1865, Congress imposed a prohibitive tax on state bank notes and forced most state institutions to join the national system. This process created a sounder currency and a simpler monetary system—but also inflexibility in the money supply and an eastern-oriented financial structure.

Social attitudes on the home front evolved in directions that would have shocked the soldiers in the field. In the excitement of moneymaking, an eagerness to display one’s wealth flourished in the largest cities. A visitor to Chicago commented that “so far as lavish display is concerned, the South Side in some

Extravagance Amid War

portions has no rival in Chicago, and perhaps not outside New York.” *Harper’s Monthly* reported that “the suddenly enriched contractors, speculators, and stock-jobbers . . . are spending money with a profusion never before witnessed in our country, at no time remarkable for its frugality. . . . The men button their waistcoats with diamonds . . . and the women powder their hair with gold and silver dust.” The *New York Herald* summarized that city’s atmosphere: “The richest silks, laces and jewelry are the soonest sold. . . . Not to keep a carriage, not to wear diamonds, . . . is now equivalent to being a nobody. This war has entirely changed the American character. . . . The individual who makes the most money—no matter how—and spends the most—no matter for what—is considered the greatest man.”

Yet idealism coexisted with ostentation. Many churches endorsed the Union cause as God’s cause. One Methodist newspaper described the war as a contest between “equalizing, humanizing Christianity” and “disunion, war, selfishness, [and] slavery.” Abolitionists, after initial uncertainty over whether to let the South go, campaigned to turn the war into a crusade against slavery. Free black communities and churches both black and white responded to the needs of slaves who flocked to the Union lines, sending clothing, ministers, and teachers to aid the runaways.

Northern women, like their southern counterparts, took on new roles. Those who stayed home organized over ten thousand soldiers’ aid societies, rolled innumerable bandages, and raised \$3 million to aid injured troops. Thousands served as nurses in

front-line hospitals, where they pressed for better care of the wounded. Yet women were only a small minority of all nurses, and they had to fight for a chance to serve at all. The professionalization of medicine since the Revolution had created a medical system dominated by men, and many male physicians did not want women's aid. Female nurses proved their worth, but only the wounded welcomed them. Even Clara Barton, the most famous female nurse, was ousted from her post in 1863.

The poet Walt Whitman left a record of his experiences as a volunteer nurse in Washington, D.C. As he dressed wounds and tried to comfort suffering

Walt Whitman

and lonely men, Whitman found "the marrow of the tragedy concentrated in those Army Hospitals." But despite "indescribably horrid wounds," he also found in

the hospitals inspiration and a deepening faith in American democracy. Whitman celebrated the "incredible dauntlessness" and sacrifice of the common soldier who fought for the Union. As he had written in the preface to his great work *Leaves of Grass* (1855), "The genius of the United States is not best or most in its executives or legislatures, but always most in the common people." Whitman worked this idealization of the common man into his poetry, which also explored homoerotic themes and rejected the lofty meter and rhyme of European verse to strive for a "genuineness" that would appeal to the masses.

Thus northern society embraced strangely contradictory tendencies. Materialism and greed flourished alongside idealism, religious conviction, and self-sacrifice. While some soldiers risked their lives willingly out of a desire to preserve the Union or extend freedom, many others openly sought to avoid service. Under the law, a draftee could stay at home by providing a substitute or paying a \$300 commutation fee. Many wealthy men chose these options, and in response to popular demand, clubs, cities, and states provided the money for others. In all, 118,000 substitutes were provided and 87,000 commutations paid before Congress ended the commutation system in 1864.



The Strange Advent of Emancipation

At the highest levels of government in the United States and in the Confederacy there was a similar lack of clarity about the purpose of the war. Throughout the first several months of the struggle, both Davis

and Lincoln studiously avoided references to slavery. Davis realized that emphasis on the issue could increase class conflict in the South. To avoid identifying the Confederacy only with the interests of slaveholders, he articulated a broader, traditional ideology. Davis told southerners that they were fighting for constitutional liberty: northerners had betrayed the founders legacy, and southerners had seceded to preserve it. As long as Lincoln also avoided making slavery an issue, Davis's line seemed to work.

Lincoln had his own reasons for not mentioning slavery. It was crucial at first not to antagonize the Union's border slave states, whose loyalty was tenuous. Also for many months Lincoln hoped that a pro-Union majority would assert itself in the South. It might be possible, he thought, to coax the South back into the Union and stop the fighting. Raising the slavery issue would severely undermine both goals. Powerful political considerations also dictated that Lincoln remain silent. The Republican Party was a young and unwieldy coalition. Some Republicans burned with moral outrage over slavery; others were frankly racist, dedicated to protecting free whites from the Slave Power and the competition of cheap slave labor; still others saw the tariff or immigration or some other issue as paramount. A forthright stand by Lincoln on the subject of slavery could split the party, gratifying some groups and alienating others. Until a consensus developed or Lincoln found a way to appeal to all the elements of the party, silence was the best approach.

The president's hesitancy ran counter to some of his personal feelings. Lincoln was a sensitive and compassionate man whose humility and moral anguish during the war were evident in his speeches and writings. But as a politician, Lincoln distinguished between his own moral convictions and his official acts. His political positions were studied and complex, calculated for maximum advantage. Frederick Douglass, the astute and courageous black protest leader, sensed that Lincoln was without prejudice toward black people. Yet Douglass judged him "pre-eminently the white man's president."

Lincoln first broached the subject of slavery in a substantive way in March 1862, when he proposed that the states consider emancipation on their own. He asked Congress to promise aid to any state that decided to emancipate, and he appealed to border-state representatives to consider this course seriously. What Lincoln proposed was gradual eman-

Lincoln's Plan for Gradual Emancipation

cipation, with compensation for slaveholders and colonization of the freed slaves outside the United States. To a delegation of free blacks he explained that “it is better for us both . . . to be separated.” Until well into 1864 Lincoln steadfastly promoted an unpromising and wholly impractical scheme to colonize blacks in some region like Central America. Despite Secretary of State William H. Seward’s care to insert phrases such as “with their consent,” the word *deportation* crept into one of Lincoln’s speeches in place of *colonization*. Thus his was as conservative a scheme as could be devised. Moreover, since the states would make the decision voluntarily, no responsibility for it would attach to Lincoln.

Others wanted to go much further. A group of Republicans in Congress, known as the Radicals and led by men such as George Julian, Charles Sumner, and Thaddeus Stevens, dedicated themselves to seeing that the war was prosecuted vigorously. They were instrumental in creating a special House-Senate committee on the conduct of the war, which investigated Union reverses, sought to make the war effort more efficient, and prodded the president to take stronger measures. Early in the war these Radicals, with support from other representatives, turned their attention to slavery.

In August 1861, at the Radicals’ instigation, Congress passed its first confiscation act. Designed to punish the Confederate rebels, the law confiscated all property used for “insurrectionary purposes.” Thus if the South used slaves in a hostile action, those slaves were declared seized and liberated. A second confiscation act (July 1862) was much more drastic: it confiscated the property of all those who supported the rebellion, even those who merely resided in the South and paid Confederate taxes. Their slaves were declared “forever free of their servitude, and not again [to be] held as slaves.” The logic behind these acts was that the insurrection—as Lincoln always termed it—was a serious revolution requiring strong measures. Let the government use its full powers, free the slaves, and crush the revolution, urged the Radicals.

Lincoln refused to adopt that view. He stood by his proposal of voluntary gradual emancipation by the states and made no effort to enforce the second confiscation act. His stance provoked a public protest from Horace Greeley, editor of the powerful *New York Tribune*. In an open letter to the president entitled “The Prayer of Twenty Millions,” Greeley

pleaded with Lincoln to “execute the laws” and declared, “On the face of this wide earth, Mr. President, there is not one disinterested, determined, intelligent champion of the Union cause who does not feel that all attempts to put down the Rebellion and at the same time uphold its inciting cause are preposterous and futile.”

Lincoln’s reply was an explicit statement of his complex and calculated approach to the question. He disagreed, he said, with all those who would make the maintenance or destruction of slavery the paramount issue of the war. “I would save the Union,” announced Lincoln. “If I could save the Union without freeing *any* slave I would do it, and if I could save it by freeing *all* the slaves I would do it; and if I could save it by freeing some and leaving others alone I would also do that. What I do about slavery, and the colored race, I do because I believe it helps to save the Union.” Lincoln closed with a personal disclaimer: “I have here stated my purpose according to my view of *official* duty; and I intend no modification of my oft-expressed *personal* wish that all men everywhere could be free.”

When he wrote those words, Lincoln had already decided on a new step: issuance of the Emancipation Proclamation. On the advice of the cabinet, however, he was waiting for a Union victory before announcing the proclamation, so that it would not appear to be an act of desperation. Yet the letter to Greeley was not simply an effort to stall; it was an integral part of Lincoln’s approach to the future of slavery, as the text of the Emancipation Proclamation would show.

On September 22, 1862, shortly after the Battle of Antietam, Lincoln issued the first part of his two-part proclamation. Invoking his powers as commander-in-chief of the armed forces, he announced that on January 1, 1863, he would emancipate the slaves in states whose people “shall then be in rebellion against the United States.” Lincoln made plain that he would judge a state to be in rebellion in January if it lacked bona fide representatives in the United States Congress. Thus his September proclamation was less a declaration of the right of slaves to be free than a threat to southerners: unless they stopped fighting and returned to Congress, they would lose their slaves. “Knowing the value that was set on the slaves by the rebels,” said Garrison Frazier, a black Georgian, “the President thought that his proclamation would stimulate them to lay down their arms . . . and their not

Confiscation Acts

all property used for “insurrectionary purposes.” Thus if the South used slaves in a hostile action, those slaves were declared seized and liberated. A second

Emancipation Proclamations

he announced that on January 1, 1863, he would emancipate the slaves in states whose people “shall then be in rebellion against

doing so has now made the freedom of the slaves a part of the war." Lincoln may not actually have expected southerners to give up their effort, but he was careful to offer them the option, thus putting the onus of emancipation on them.

When Lincoln designated the areas in rebellion on January 1, his proclamation excepted every Confederate county or city that had fallen under Union control. Those areas, he declared, "are, for the present, left precisely as if this proclamation were not issued." Nor did Lincoln liberate slaves in the border slave states that remained in the Union. "The President has purposely made the proclamation inoperative in all places where . . . the slaves [are] accessible," charged the anti-administration *New York World*. "He has proclaimed emancipation only where he has notoriously no power to execute it." Partisanship aside, even Secretary of State Seward, a moderate Republican, said sarcastically, "We show our sympathy with slavery by emancipating slaves where we cannot reach them and holding them in bondage where we can set them free." A British official, Lord Russell, commented on the "very strange nature" of the document, noting that it did not declare "a principle adverse to slavery."

By making the liberation of the slaves "a fit and necessary war measure," furthermore, Lincoln raised a variety of legal questions. How long did a war measure remain in force? Did it expire with the suppression of a rebellion? The proclamation did little to clarify the status or citizenship of the freed slaves. And a reference to garrison duty in one of the closing paragraphs suggested that former slaves would have inferior duties and rank in the army. For many months, in fact, their pay and treatment were inferior.

Thus the Emancipation Proclamation was a puzzling and ambiguous document that said less than it seemed to say. It freed no slaves, and serious limitations were embedded in its language. But if as a moral and legal document it was wanting, as a political document it was nearly flawless. Because the proclamation defined the war as a war against slavery, radicals could applaud it, even if the president had not gone as far as Congress. Yet at the same time it protected Lincoln's position with conservatives, leaving him room to retreat if he chose and forcing no immediate changes on the border slave states.

The need for men soon convinced the administration to recruit northern and southern blacks for the Union Army. By the spring of 1863, African-American troops were proving their value. Lincoln came to see them as "the great *available* and yet un-

availed of force for restoring the Union." African-American leaders hoped that military service would secure equal rights for their people. Once the black soldier had fought for the Union, wrote Frederick Douglass, "there is no power on earth which can deny that he has earned the right of citizenship in the United States." If black soldiers turned the tide, asked another man, "would the nation refuse us our rights?"

In June 1864, Lincoln gave his support to a constitutional ban on slavery. Reformers such as Elizabeth Cady Stanton and Susan B. Anthony were pressing for an amendment that would write emancipation into the Constitution. On the eve of the Republican national convention, Lincoln called the party's chairman to the White House and instructed him to have the party "put into the platform as the keystone, the amendment of the Constitution abolishing and prohibiting slavery forever." The party promptly called for a new amendment, the Thirteenth. Republican delegates probably would have adopted such a plank without his urging, but Lincoln demonstrated his commitment by lobbying Congress for quick approval of the measure. The proposed amendment passed in 1865 and was sent to the states for ratification or rejection. Lincoln's strong support for the Thirteenth Amendment—an unequivocal prohibition of slavery—constitutes his best claim to the title "Great Emancipator."

Yet Lincoln soon clouded that clear stand, for in 1865 the newly reelected president considered allowing the defeated southern states to reenter the Union and delay or defeat the amendment. In February he and Secretary of State Seward met with three Confederate commissioners at Hampton Roads, Virginia. The end of the war was clearly in sight, and southern representatives angled vainly for an armistice that would allow the South to remain a separate nation. But Lincoln was doing some political maneuvering of his own, apparently contemplating the creation of a new national party based on a postwar alliance with southern Whigs and moderate and conservative Republicans. The cement for the coalition would be concessions to planter interests.

Pointing out that the Emancipation Proclamation was only a war measure, Lincoln predicted that the courts would decide whether it had granted all, some, or none of the slaves their freedom. Seward observed that the Thirteenth Amendment, which would be definitive, was not yet ratified and that reentry

Hampton Roads Conference

into the Union would allow the southern states to defeat it. Lincoln did not contradict Seward but spoke in favor of “prospective” ratification: approval with the effective date postponed for five years. He also promised to seek \$400 million in compensation for slaveholders and to consider their views on related questions such as confiscation. Such financial aid would provide an economic incentive for planters to rejoin the Union and capital to cushion the economic blow of emancipation.

These were startling propositions from a president on the verge of military victory. Most northerners opposed them, and only the opposition of Jefferson Davis, who set himself against anything short of independence, prevented discussion of the proposals in the South. Even at the end of the war, Lincoln was keeping his options open and maintaining the distinction he had drawn between “official duty” and “personal wish.” Lincoln did not attempt to mold public opinion on race, as did advocates of equality in one direction and racist Democrats in the other. Instead, he moved cautiously, constructing complex and ambiguous positions and avoiding the risks inherent in challenging, educating, or inspiring the nation’s conscience.

Before the war was over, the Confederacy, too, addressed the issue of emancipation. Jefferson Davis himself offered a strong proposal in favor of liberation.

Davis’s Plan for Emancipation

Though emancipation was less popular in the South than in the North, Davis did not flinch or conceal his purpose. He was dedicated to independence, and he was willing to sacrifice slavery to achieve that goal. After considering the alternatives for some time, Davis concluded late in 1864 that the military status of the Confederacy was desperate and that independence with emancipation was preferable to defeat with emancipation. He proposed that the Confederate government purchase forty thousand slaves to work for the army as laborers, with a promise of freedom at the end of their service. Soon Davis upgraded his proposal, calling for the recruitment and arming of slaves as soldiers, who likewise would gain their freedom at the end of the war. The wives and children of these soldiers, he made plain, must also receive freedom from the states. Davis and his advisers did not favor full equality—they envisioned “an intermediate state of serfage or peonage.” Thus they shared with Lincoln and their entire generation racial attitudes that blinded them to the massive changes taking place around them.

Still, Davis had proposed a radical change for the slaveholding South. Bitter debate resounded through the Confederacy, but Davis stood his ground. When the Confederate Congress approved slave enlistments without the promise of freedom, Davis insisted on more. He issued an executive order to guarantee that owners would emancipate slave soldiers, and his allies in the states started to work for emancipation of the soldiers’ families. Some black troops had started to drill as the end of the war approached.

Confederate emancipation began too late to revive southern armies or win diplomatic advantages with antislavery Europeans. By contrast, Lincoln’s Emancipation Proclamation stimulated a vital infusion of forces into the Union armies. Beginning in 1863 slaves from the Confederacy and the border states shouldered arms for the North. Before the war was over, 134,000 slaves (and 52,000 free African-Americans) had fought for freedom and the Union. Their participation aided northern victory while it discouraged recognition of the Confederacy by foreign governments. Lincoln’s policy, whatever its limitations and lack of clarity, had profound practical effects.



The Soldier’s War

The intricacies of policymaking were far from the minds of ordinary soldiers. Military service completely altered their lives. Enlistment took young men from their homes and submerged them in large organizations whose military discipline ignored their individuality. Army life meant tedium, physical hardship, and separation from loved ones even in the best of times. Soldiers in battle confronted fear and danger, and the risk of death from wounds or disease was very high. Yet the military experience had powerful attractions as well. It molded men on both sides so thoroughly that they came to resemble each other far more than they resembled civilians back home. Many soldiers forged amid war a bond with their fellows and a connection to a noble purpose that they cherished for years afterward.

Union soldiers may have sensed most clearly the massive scale of modern war. Most were young; eighteen was the most common age, followed by twenty-one. Many went straight from small towns and farms into large armies supplied by extensive bureaucracies. By late 1861 there were 640,000 volunteers in arms, a stupendous increase over the regular

How do historians know what the average soldier thought and felt? A vast number of diaries and letters written by soldiers have been preserved in archives and libraries and reveal a wide range of experiences. Many soldiers acted on noble ideals, but others did not. Papers at the University of Michigan document one Union soldier's worry that "If this experiment in self-government by the people shall fail, where are the oppressed and the downtrodden millions of the earth to look for hope of better days?" They also contain letters from Private Robert Sherry of New York, shown here.

Sherry cared little for the Republican Party. The enlisted men and officers in his regiment rarely got along, and after twenty soldiers were sent to Dry Tortugas, in the Gulf of Mexico, as punishment for a mutiny, Sherry wrote bitterly that he hoped "to see the day when we will get into some battle that will be the means of getting a great portion of our Officers killed or wounded." A rough man in a rough regiment, Sherry enjoyed looting and fighting. Clements Library, University of Michigan.



army of 20,000 men. The increase occurred so rapidly that it is remarkable the troops were supplied and organized as well as they were. Yet many soldiers' first experiences with a large military organization were unfortunate.

Soldiers benefited from certain new products, such as canned condensed milk, but blankets, clothing, and arms were often of poor quality. Vermin

abounded. Hospitals were badly managed at first. Rules of hygiene in large camps were badly written or unenforced; latrines were poorly made or carelessly used. One investigation turned up "an area of over three acres, encircling the camp as a broad belt, on which is deposited an almost perfect layer of human excrement." Water supplies were unsafe and typhoid epidemics common. About 57,000 army men died

from dysentery and diarrhea. The situation would have been much worse but for the United States Sanitary Commission. A voluntary civilian organization, the commission worked to improve conditions in camps and to aid sick and wounded soldiers. Even so, 224,000 Union troops died from disease or accidents, far more than the 140,000 who died as a result of battle. Confederate troops were less well supplied, especially in the latter part of the war, and they had no sanitary commission. Still, an extensive network of hospitals, aided by many female volunteers, sprang up to aid the sick and wounded.

On both sides troops quickly learned that soldiering was far from glorious. “The dirt of a camp life knocks all its poetry into a cocked hat,” wrote

Realities of a Soldier's Life

a North Carolina volunteer in 1862. One year later he marveled at his earlier innocence. Fighting had taught him “the realities of a soldier's life. We had no tents after the 6th of August, but slept on the ground, in the woods or open fields, without regard to the weather. . . . I learned to eat fat bacon raw, and to like it. . . . Without time to wash our clothes or our persons, and sleeping on the ground all huddled together, the whole army became lousy more or less with body lice.” Union troops “skirmished” against lice by boiling their clothes or holding them over a hot fire, but, reported one soldier, “I find some on me in spite of all I can do.”

Few had seen violent death before, but war soon exposed them to the blasted bodies of their friends and comrades. “Any one who goes over a battlefield after a battle,” wrote one Confederate, “never cares to go over another. . . . It is a sad sight to see the dead and if possible more sad to see the wounded—shot in every possible way you can imagine.” Many men died gallantly; there were innumerable striking displays of courage. But far more often soldiers gave up their lives in the mass, as part of a commonplace sacrifice. “They mowed us down like grass,” recalled one survivor of a Union assault.

Advances in technology made the Civil War particularly deadly. By far the most important were the rifle and the “minie ball.” Bullets fired from a smooth-bore musket tumbled and wobbled as they flew through the air and thus were not accurate at distances over eighty yards. Cutting spiraled grooves inside the barrel gave the projectile a spin and much greater accuracy, but rifles remained difficult to load and use until the Frenchman Claude Minie and the American James Burton developed a new kind of bullet.

Civil War bullets were sizable lead slugs with a cavity at the bottom that expanded upon firing so that the bullet “took” the rifling and flew accurately. With these bullets, rifles were accurate at four hundred yards and useful up to one thousand yards.

This meant, of course, that soldiers assaulting a position defended by riflemen were in greater peril than ever before. Even though Civil War rifles were cumbersome to load (relatively few of the new, untried, breech-loading and repeating rifles were ordered), the defense gained a significant advantage. While ar-

Impact of the Rifle

tillery now fired from a safe distance, there was no substitute for the infantry assault or the popular turning movements aimed at an enemy's flank. Thus advancing soldiers had to expose themselves repeatedly to accurate rifle fire. Large lead bullets shattered bones and destroyed flesh, and, because medical knowledge was rudimentary, even minor wounds often led to death through infection. Thus the toll from Civil War battles was very high. Never before in Europe or America had such massive forces pummeled each other with weapons of such destructive power. Yet the armies in the Civil War seemed virtually indestructible. Even in the bloodiest engagements, in which thousands of men died, the losing army was never destroyed. As losses mounted, many citizens wondered at what Union soldier (and future Supreme Court justice) Oliver Wendell Holmes called “the butcher's bill.”

Still, Civil War soldiers developed deep commitments to each other and to their task. As campaigns dragged on, fighting and dying with their comrades became their reality, and most soldiers who did not desert grew determined to see the struggle through. “We now, like true Soldiers go determined not to yield one inch,” wrote a New York corporal. When at last the war was over, “it seemed like breaking up a family to separate,” one man observed. Another admitted, “We shook hands all around, and laughed and seemed to make merry, while our hearts were heavy and our eyes ready to shed tears.”

The bonding may have been most dramatic among officers and men in the northern black regiments, for there white and black troops took their first steps toward bridging a deep racial divide. Racism in the Union Army was strong. Most white soldiers wanted nothing to do with black people and regarded them as inferior. “I never

Black Soldiers Fight for Acceptance

came out here for to free the black devils," wrote one soldier, and another objected to fighting beside African-Americans because, "We are a too superior race for that." For many, acceptance of black troops grew only because they could do heavy labor and "stop Bullets as well as white people." A popular song celebrated "Sambo's Right to Be Kilt" as the only justification for black enlistments.

But among some a change occurred. White officers who volunteered for black units only to gain promotion found that experience altered their opinions. After just one month with black troops, a white captain informed his wife, "I have a more elevated opinion of their abilities than I ever had before. I *know* that many of them are vastly the *superiors* of those (many of those) who would condemn them all to a life of brutal degradation." One general reported that his "colored regiments" possessed "remarkable apti-

tude for military training," and another observer said, "They fight like fiends."

Black troops created this change through their dedication. They had a mission to destroy slavery and demonstrate their equality. "When Rebellion is crushed," wrote a black volunteer from Connecticut, "who will be more proud than I to say, 'I was one of the first of the despised race to leave the free North with a rifle on my shoulder, and give the lie to the old story that the black man will not fight.'" Corporal James Henry Gooding of Massachusetts's black 54th Regiment explained that his unit intended "to live down all prejudice against its color, by a determination to do well in any position it is put." After an engagement he was proud that "a regiment of white men gave us three cheers as we were passing them," because "it shows that we did our duty as men should." Through such experience under fire the blacks and



Black enlistments were vital to the Union Army, and military service made a major impact on those who had been slaves. These photographs, taken by a photographer accompanying the Union troops, show Hubbard Pryor before and after he enlisted in 1864 in Tennessee. Pryor survived the war. He married a former slave, and he and his wife worked as farmers and raised four children. National Archives.

whites of the 54th Massachusetts forged deep bonds. Just before the regiment launched its costly assault on Fort Wagner, in Charleston harbor, a black soldier called out to abolitionist Colonel Robert Gould Shaw, “Colonel, I will stay by you till I die.” “And he kept his word,” noted a survivor of the attack. “He has never been seen since.”

Such valor emerged despite persistent discrimination. Off-duty black soldiers were sometimes attacked by northern mobs; on duty, they did most of the “fatigue duty,” or heavy labor. The Union government, moreover, paid white privates \$13 per month plus a clothing allowance of \$3.50, whereas black privates earned only \$10 per month less \$3 deducted for clothing. Outraged by this injustice, the men of the 54th and 55th Massachusetts refused to accept any pay whatever, and Congress eventually remedied the inequity. In this instance, at least, the majority of legislators agreed with a white private that black troops had “proved their title to *manhood* on many a bloody field fighting freedom’s battles.”



The Tide of Battle Begins to Turn

The fighting in the spring and summer of 1863 did not settle the war, but it began to place clear limits on the outcome. The campaigns began in a deceptively positive way for Confederates,

Battle of Chancellorsville

as their Army of Northern Virginia performed brilliantly in the Battle of Chancellorsville.

For once a large Civil War army was not slow and cumbersome but executed tactics with speed and precision. On May 2 and 3, some 130,000 members of the Union Army of the Potomac bore down on fewer than 60,000 Confederates (see map, page 427). Boldly, as if they enjoyed being outnumbered, Lee and Stonewall Jackson divided their forces, ordering 30,000 men under Jackson on a day-long march westward to gain position for a flank attack. This classic turning movement was boldly carried out in the face of great numerical disadvantage. Arriving at their position late in the afternoon, Jackson’s seasoned “foot cavalry” found unprepared Union troops laughing, smoking, and playing cards. The Union soldiers had no idea they were under attack until frightened deer and rabbits bounded out of the forest, followed by gray-clad troops. The Confederate attack drove the entire right side of the Union Army back in confusion. Eager to press his advantage, Jackson rode forward with

a few officers to study the ground. As they returned, southern troops mistook them for federals in the fading light and fired, fatally wounding their commander. The next day Union forces left in defeat. Chancellorsville was a remarkable southern victory but costly because of the loss of Stonewall Jackson.

July brought crushing defeats for the Confederacy in two critical battles—Vicksburg and Gettysburg—that effectively circumscribed Confederate

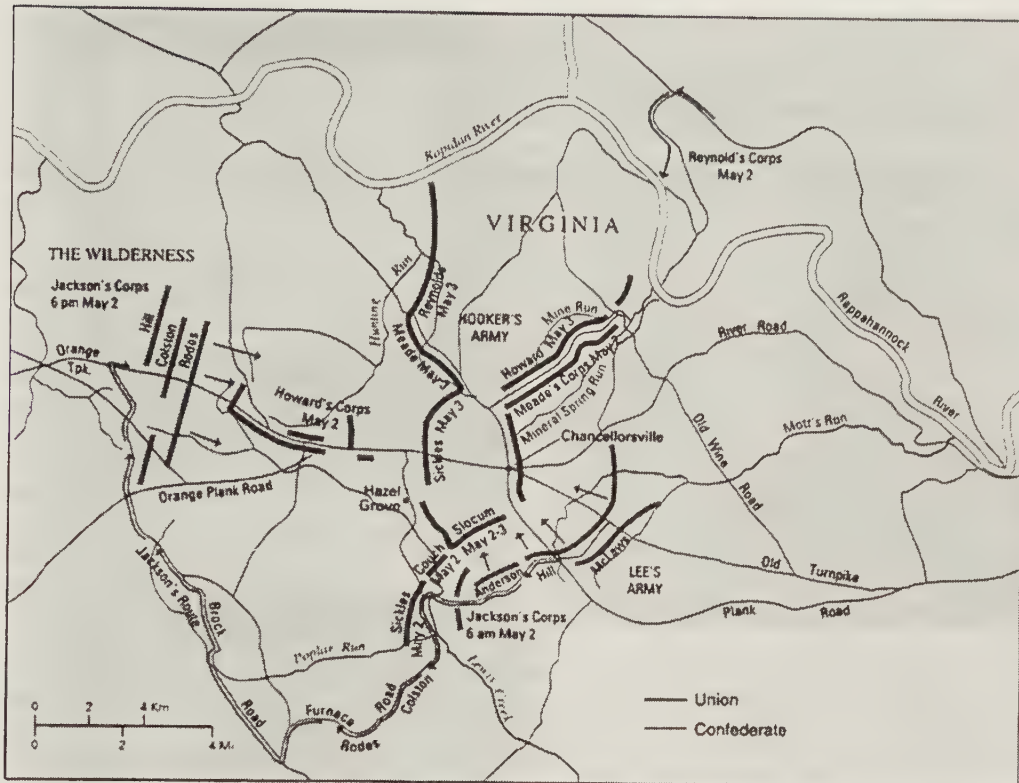
Battle of Vicksburg

hopes for independence. Vicksburg was a vital western citadel, the last major fortification on the Mississippi River in southern hands (see map, page 409). After

months of searching through swamps and bayous, General Ulysses S. Grant found an advantageous approach to the city. He laid siege to Vicksburg in May, bottling up the defending army of General John Pemberton. If Vicksburg fell, Union forces would control the river, cutting the Confederacy in half and gaining an open path into its interior. To stave off such a result, Jefferson Davis gave command of all other forces in the area to General Joseph E. Johnston and beseeched him to go to Pemberton’s aid. Meanwhile, at a council of war in Richmond, General Robert E. Lee proposed a Confederate invasion of the North. Although such an offensive would not relieve Vicksburg directly, it could stun and dismay the North and, if successful, possibly even lead to peace.

Lee’s troops streamed through western Maryland and into Pennsylvania, threatening both Washington and Baltimore. As his superb army advanced, the possibility of a major victory near the Union capital became more and more likely. Confederate prospects along the Mississippi, however, darkened. Davis repeatedly wired General Johnston, urging him to concentrate his forces and attack Grant’s army. Johnston, however, did nothing effective and telegraphed at one point, “I consider saving Vicksburg hopeless.” Grant’s men, meanwhile, were supplying themselves from the abundant crops of the Mississippi River valley and could continue their siege indefinitely. Their rich meat-and-vegetables diet became so tiresome, in fact, that one day, as Grant rode by, a private looked up and muttered, “Hardtack” (dry biscuits). Soon a line of soldiers was shouting “Hardtack! Hardtack!” demanding respite from turkey and sweet potatoes.

In such circumstances the fall of Vicksburg was inevitable, and on July 4, 1863, its commander surrendered. The same day a battle that had been rag-



The Battle of Chancellorsville, May 2-3, 1863 At Chancellorsville on the first day, Jackson and Lee successfully carried out a daring flanking movement to the west, around the Union forces' right. Although federal forces were driven back in confusion, the victory was costly to the Confederacy, for Jackson suffered a fatal wound.

Battle of Gettysburg

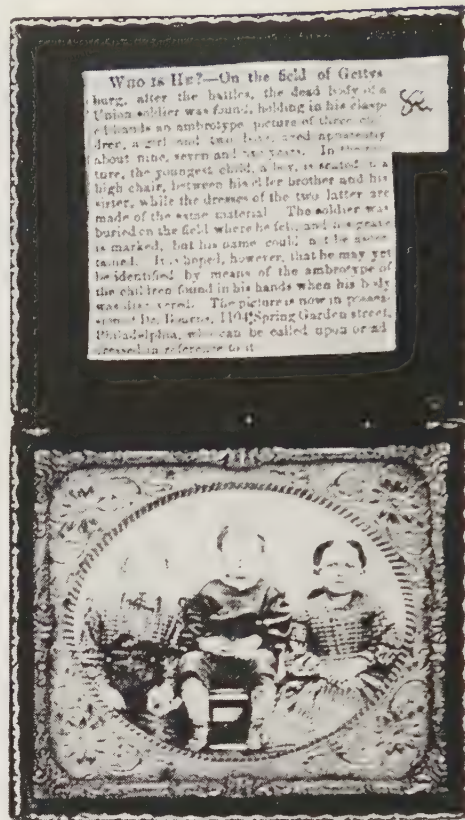
ing for three days concluded at Gettysburg, Pennsylvania. On July 1 Confederate forces hunting for a supply of shoes had collided with part of the Union Army. Heavy fighting on the second day left federal forces in possession of high ground along Cemetery Ridge. There they enjoyed the protection of a stone wall and a clear view of their foe across almost a mile of open field. Undaunted, Lee believed his splendid troops could break the Union line, and on July 3 he ordered a direct assault. Full of foreboding, General James Longstreet warned Lee that "no 15,000 men ever arrayed for battle can take that position." But Lee stuck to his plan. Brave troops under General George E. Pickett methodically marched up the slope in a doomed assault known as Pickett's Charge. For a moment a hundred Confederates breached the enemy's line, but most fell in heavy slaughter. On

July 4 Lee had to withdraw, having suffered almost 4,000 dead and about 24,000 missing and wounded. The Confederate general reported to President Davis that "I am alone to blame" and offered to resign. Davis replied that to find a more capable commander was "an impossibility."

Southern troops displayed unforgettable courage and dedication at Gettysburg, but the results there and at Vicksburg were disastrous. The Confederacy was split in two; west of the Mississippi General E. Kirby Smith had to operate on his own, virtually independent of Richmond. Moreover, the heartland of the Confederacy lay exposed to invasion, and Lee's defeat spelled the end of major southern offensive actions. Too weak to prevail in attack, the Confederacy henceforth would have to conserve its limited resources and rely on a prolonged defense. By refusing to be beaten, the South might yet win, but its prospects were darker than ever before.



These “children of the battlefield” aroused great interest in the North after a burial detail at Gettysburg found this ambrotype clutched in the hand of a fallen Union soldier. After thousands of copies of the picture were circulated, the wife of Sergeant Amos Humiston of the 154th New York Infantry (above) recognized her children and knew that she was a widow. The C. Craig Caba Gettysburg Collection, from *Gettysburg*. Larry Sherer © 1991 Time-Life Books, Inc.



The Disintegration of Confederate Unity

Both northern and southern governments waged the final two years of the war in the face of increasing opposition at home. Dissatisfactions that had surfaced earlier grew more intense and sometimes violent. The gigantic costs of a war that neither side seemed able to win fed the unrest. But protest also arose from fundamental stresses in the social structures of North and South.

The Confederacy's problems were both more serious and more deeply rooted than the North's. Vastly disadvantaged in industrial capacity, natural resources, and labor, southerners felt the cost of the war more quickly, more directly, and more painfully than northerners. But even more fundamental were the Confederacy's internal problems; crises that were integrally connected with the southern class system threatened the Confederate cause.

One ominous development was the planters' increasing opposition to their own government, whose

actions often had a negative effect on them. Not only did the Richmond government impose new taxes and the tax-in-kind, but Confederate military authorities also impressed slaves to build fortifications. And when Union forces advanced on plantation areas, Confederate commanders burned stores of cotton that lay in the enemy's path. Such interference with plantation routines and financial interests was not what planters had expected of their government, and they complained bitterly.

Nor were the centralizing policies of the Davis administration popular. The increasing size and power of the Richmond administration startled and alarmed planters who had condemned federal usurpations. In fact, the Confederate constitution had granted substantial powers to the central government, especially in time of war. But many planters assumed with R. B. Rhett, editor of the *Charleston Mercury*, that the Confederate constitution “leaves the States untouched in their Sovereignty, and commits to the Confederate Government only a few simple objects, and a few simple powers to enforce them.” Governor Joseph E.

Brown of Georgia took a similarly inflated view of the importance of the states. During the brief interval between Georgia's secession from the Union and its admission to the Confederacy, Brown sent an ambassador to Europe to seek recognition for the sovereign republic of Georgia from Queen Victoria, Napoleon III, and the king of Belgium.

Years of opposition to the federal government within the Union had frozen southerners in a defensive posture. Now they erected the barrier of states' rights as a defense against change, hiding behind it while their capacity for creative statesmanship atrophied. Planters sought, above all, a guarantee that their plantations and their lives would remain untouched; they were not deeply committed either to building a southern nation or to winning independence. If the Confederacy had been allowed to depart from the Union in peace and continue as a semideveloped cotton-growing region, they would have been content. When secession revolutionized their world, they could not or would not adjust.

Confused and embittered planters struck out at Jefferson Davis. Conscription, thundered Governor Brown, was "subversive of [Georgia's] sovereignty, and at war with all the principles for the support of which Georgia entered into this revolution." Searching for ways to frustrate the law, Brown bickered over draft exemptions and ordered local enrollment officials not to cooperate with the Confederacy. The *Charleston Mercury* told readers that "conscription . . . is . . . the very embodiment of Lincolnism, which our gallant armies are today fighting." In a gesture of stubborn selfishness, Robert Toombs of Georgia, a former United States senator, refused to switch from cotton to food crops, defying the wishes of the government, the newspapers, and his neighbors' petitions. His action bespoke the inflexibility and frustration of the southern elite at a crucial point in the Confederacy's struggle to survive.

The southern courts ultimately upheld Davis's power to conscript. He continued to provide strong leadership and steered through Congress measures that gave the Confederacy a fighting chance. Despite his cold formality and inability to disarm critics, Davis possessed two important virtues: iron determination and total dedication to independence. These qualities kept the Confederacy afloat, for he implemented his measures and enforced them. But his actions earned him the hatred of most influential and elite citizens.

Meanwhile, for ordinary southerners, the dire predictions of hunger and suffering were becoming a



The impoverishment of nonslaveholding white families was a critical problem for the Confederacy. The sale of this sheet music was intended not only to boost morale but also to raise money that could be used to aid the hungry and needy. This effort and larger government initiatives, however, failed to solve the problem. Chicago Historical Society.

reality. Food riots occurred in the spring of 1863 in

Food Riots in Southern Cities

Atlanta, Macon, Columbus, and Augusta, Georgia, and in Salisbury and High Point, North Carolina. On April 2, a crowd assembled in Richmond, the Confederate capital, to demand relief. A passerby, noticing the excitement, asked a young girl, "Is there some celebration?" "We celebrate our right to live," replied the girl. "We are starving. As soon as enough of us get together we are going to the bakeries and each of us will take a loaf of bread." Soon they did just that, sparking a riot that Davis himself had to quell at gunpoint. Later that year, another group of angry rioters looking for food ransacked a street in Mobile, Alabama.

Throughout the rural South, ordinary people resisted more quietly—by refusing to cooperate with conscription, tax collection, and impressments of food. "In all the States impressments are evaded by every means which ingenuity can suggest, and in some openly resisted," wrote a high-ranking commissary officer. Farmers who did provide food for the army refused to accept payment in certificates of credit or

government bonds, as required by law. Conscription officers increasingly found no one to draft—men of draft age were hiding out in the forests. “The disposition to avoid military service is general,” observed one of Georgia’s senators in 1864. In some areas tax agents were killed in the line of duty.

Jefferson Davis was ill equipped to deal with such discontent. Austere and private by nature, he failed to communicate with the masses. Often he buried himself in military affairs or administrative details, until a crisis forced him to rush off on a speaking tour to revive the spirit of resistance. His class perspective also distanced him from the sufferings of the common people. While his social circle in Richmond dined on duck and oysters, ordinary southerners recovered salt from the drippings on their smokehouse floors and went hungry. State governors who responded to people’s needs won the public’s loyalty, but Davis failed to reach out to the plain folk and thus lost their support.

Such discontent was certain to affect the Confederate armies. “What man is there that would stay in the army and no that his family is sufring at home?” an angry citizen wrote anonymously to the secretary of war. Worried about their loved ones and resentful of what they saw as a rich man’s war, large numbers of men did indeed leave the armies. Their friends and neighbors gave them support. Mary Boykin Chesnut observed a man being dragged back to the army as his wife looked on. “Desert agin, Jake!” she cried openly. “You desert agin, quick as you kin. Come back to your wife and children.”

Desertion did not become a serious problem for the Confederacy until mid-1862, and stiffer policing solved the problem that year. But from 1863 on, the number of men on duty fell rapidly as desertions soared. By mid-1863, John A. Campbell, the South’s assistant secretary of war, wondered whether “so general a habit” as desertion could be considered a crime. Campbell estimated that 40,000 to 50,000 troops were absent without leave and that 100,000 were evading duty in some way. Furloughs, amnesty proclamations, and appeals to return had little effect; by November 1863, Secretary of War James Seddon admitted that one-third of the army could not be accounted for. The situation was to worsen.

The defeats at Gettysburg and Vicksburg dealt a body blow to Confederate morale. When the news reached Josiah Gorgas, the genius of Confederate

ordnance operations, he confided to his diary, “To-day absolute ruin seems our portion. The Confederacy totters to its destruction.” In desperation President Davis and several state governors resorted to threats and racial scare tactics to drive southern whites to further sacrifice. Defeat, Davis warned, would mean “extermination of yourselves, your wives, and children.” Governor Charles Clark of Mississippi predicted “elevation of the black race to a position of equality—aye, of superiority, that will make them your masters and rulers.” Abroad, British officials held back the delivery of badly needed warships, and recognition of the Confederate state became even more unlikely (see page 433).

From this point on, the internal disintegration of the Confederacy quickened. A few newspapers began to call openly for peace. “We are for peace,” admitted the *Raleigh* (North Carolina) *Daily Progress*, “because there has been enough of blood and carnage, enough of widows and orphans.” A neighboring journal, the *North Carolina Standard*, tacitly admitted that defeat was inevitable and called for negotiations. Similar proposals were made in several state legislatures, though they were presented as plans for independence on honorable terms. Confederate leaders began to realize that they were losing the support of the common people. Governor Zebulon Vance of North Carolina wrote privately that independence would require more “blood and misery . . . and our people will not pay this price I am satisfied for their independence. . . . The great popular heart is not now & never has been in this war.”

In North Carolina a peace movement grew under the leadership of William W. Holden, a popular Democratic politician and editor. Over one hundred

public meetings took place in the summer of 1863 in support of peace negotiations, and many seasoned political observers believed that Holden had the majority of

Southern Peace Movements

the people behind him. In Georgia early in 1864, Governor Brown and Alexander H. Stephens, vice president of the Confederacy, led a similar effort. Ultimately, however, these movements came to naught. The lack of a two-party system threw into question the legitimacy of any criticism of the government; even Holden and Brown could not entirely escape the taint of dishonor and disloyalty. That the movement existed at all demonstrates deep disaffection.

The results of the 1863 congressional elections strengthened dissent in the Confederacy. Everywhere secessionists and supporters of the adminis-

Desertions from the Confederate Army

tration lost seats to men not identified with the government. Many of the new representatives were former Whigs who opposed the Davis administration or publicly favored peace. In the last years of the war, much of Davis's support in the Confederate Congress came from Union-occupied districts, whose people would share no burdens of the war effort until success was achieved.

Having previously secured the legislation he needed, Davis used the government bureaucracy and the army to enforce his unpopular policies. Ironically, as the Confederacy's prospects grew desperate, former critics such as the *Charleston Mercury* became supporters of the administration. They and a core of courageous, determined soldiers kept the Confederacy alive in spite of disintegrating popular support.

By 1864 much of the opposition to the war had moved entirely outside the political sphere. Southerners were simply giving up the struggle and withdrawing their cooperation from the government. Deserters dominated whole towns and counties. Secret societies favoring reunion, such as the Heroes of America and the Red Strings, sprang up. Active dissent spread everywhere and was particularly common in upland and mountain regions. "The condition of things in the mountain districts of North Carolina, South Carolina, Georgia, and Alabama," admitted Assistant Secretary of War John A. Campbell, "menaces the existence of the Confederacy as fatally as either of the armies of the United States." Confederate officials tried using the army to round up deserters and compel obedience, but this approach was only temporarily effective. The government was losing the support of its citizens.



Antiwar Sentiment in the North

In the North opposition to the war was similar but less severe. Alarm intensified over the growing centralization of government, and war-weariness was widespread. Resentment of the draft sparked protest, especially among poor citizens, and the Union Army struggled with a desertion rate as high as the Confederates'. But the Union was so much richer than the South in human resources that none of these problems ever threatened the effectiveness of the government. Fresh recruits were always available, and there were no shortages of food and other necessities.

Also, Lincoln possessed a talent that Davis lacked: he knew how to stay in touch with the ordinary citizen. Through letters to newspapers and to soldiers'

families, he reached the common people and demonstrated that he had not forgotten them. The daily carnage, the tortuous political problems, and the ceaseless criticism weighed heavily on him. But this president—a self-educated man of humble origins—was able to communicate his suffering. His moving words helped to contain northern discontent, though they could not remove it.

Much of the wartime protest in the North was political in origin. The Democratic Party fought to regain power by blaming Lincoln for the war's carnage, the expansion of federal powers, inflation and the high tariff, and the emancipation of blacks. Appealing to tradition, its leaders called for an end to the

Peace Democrats

war and reunion on the basis of "the Constitution as it is and the Union as it was." The Democrats denounced conscription and martial law and defended states' rights and the interests of agriculture. They charged repeatedly that Republican policies were designed to flood the North with blacks, depriving white males of their status, their jobs, and their women. These claims appealed to southerners who had settled north of the Ohio River, to conservatives, to many poor people, and to some eastern merchants who had lost profitable southern trade. In the 1862 congressional elections, the Democrats made a strong comeback, and peace Democrats—who would go much farther than others in their party to end the war—had influence in New York State and majorities in the legislatures of Illinois and Indiana.

Led by outspoken men like Representative Clement L. Vallandigham of Ohio, the peace Democrats made themselves highly visible. Vallandigham criticized Lincoln as a dictator who had suspended the writ of habeas corpus without congressional authority and had arrested thousands of innocent citizens. Like other Democrats, he condemned both conscription and emancipation and urged voters to use their power at the polling place to depose "King Abraham." Vallandigham stayed carefully within legal bounds, but his attacks seemed so damaging to the war effort that military authorities arrested him for treason after Lincoln suspended habeas corpus. Lincoln wisely decided against punishment—and martyr's status—for the senator and exiled him to the Confederacy, thus ridding himself of a troublesome critic and saddling puzzled Confederates with a man who insisted on talking about "our country." (Eventually Vallandigham returned to the North through Canada.)



Mobs in the New York City draft riots directed much of their anger at African-Americans. Rioters burned an orphanage for black children and killed scores of blacks. This wood engraving, which appeared in the Illustrated London News on August 8, 1863, depicts a lynching in Clarkson Street. Chicago Historical Society.

Lincoln believed that antiwar Democrats were linked to secret organizations that harbored traitorous ideas, such as the Knights of the Golden Circle and the Order of American Knights. These societies, he feared, encouraged draft resistance, discouraged enlistment, sabotaged communications, and plotted to aid the Confederacy. Likening such groups to a poisonous snake, Republicans sometimes branded them—and by extension the peace Democrats—as Copperheads. Though Democrats were connected with these organizations, most engaged in politics rather than treason. And though some saboteurs and Confederate agents were active in the North, they never brought about any major demonstration of support for the Confederacy.

More violent opposition to the government arose from ordinary citizens facing the draft, which became law in 1863. The urban poor and immigrants in strongly Democratic areas were especially hostile to conscription. Federal enrolling officers made up the lists of eligibles, a procedure open to personal favoritism and prejudice. Many men, including some of modest means, managed to avoid the army by hiring a substitute or paying commutation, but the poor viewed the commutation fee as discriminatory, and many immigrants suspected (wrongly, on the whole) that they were called in disproportionate num-

bers. (Approximately 200,000 men born in Germany and 150,000 born in Ireland served in the Union Army.)

As a result, there were scores of disturbances and melees. Enrolling officers received rough treatment in many parts of the North, and riots occurred

New York City Draft Riot

in New Jersey, Ohio, Indiana, Pennsylvania, Illinois, and Wisconsin. By far the most serious outbreak of violence occurred in New York City in July 1863. The war was unpopular in that Democratic stronghold, and racial, ethnic, and class tensions ran high. Shippers had recently broken a longshoremen's strike by hiring black strikebreakers to work under police protection. Working-class New Yorkers feared an inflow of black labor from the South and regarded blacks as the cause of the bloody war. Irish workers, many recently arrived and poor, resented being forced to serve in the place of others who could afford to avoid the draft.

Military police officers came under attack first; then mobs crying "Down with the rich" looted wealthy homes and stores. But blacks became the special target. Those who happened to be in the rioters' path were beaten; soon the mob rampaged through African-American neighborhoods, destroy-

ing an orphans' asylum. At least seventy-four people died in the violence, which raged out of control for three days. Only the dispatch of army units fresh from Gettysburg ended the episode.

Discouragement and war-weariness reached a peak in the summer of 1864, when the Democratic Party nominated the popular General George B. McClellan for president and inserted a peace plank into its platform. The plank, written by Vallandigham, condemned "four years of failure to restore the Union by the experiment of war," called clearly for an armistice, and spoke vaguely about preserving the Union. Lincoln, running with Tennessee's Andrew Johnson on a "National Union" ticket, concluded that it was "exceedingly probable that this Administration will not be reelected." During a publicized interchange with Confederate officials sent to Canada, Lincoln insisted that the terms for peace include reunion and "the abandonment of slavery." A wave of protest arose in the North from voters who were weary of war and dedicated only to reunion. Lincoln quickly backtracked, denying that his offer meant "that nothing *else* or *less* would be considered, if offered." He would insist on freedom only for those slaves (about 134,000) who had joined the Union Army under his promise of emancipation. Lincoln's action showed his political weakness, but the fortunes of war soon changed the electoral situation.



Northern Pressure and Southern Will

The success of the North's long-term diplomatic strategy was sealed in 1864. From the outset, the North had pursued one paramount goal: to prevent recognition of the Confederacy by European nations. Foreign recognition would belie Lincoln's claim that the United States was fighting an illegal rebellion and would open the way to the financial and military aid that could ensure Confederate independence. The British elite, however, felt considerable sympathy for southern planters, whose aristocratic values were similar to their own. And both England and France stood to benefit from a divided and weakened America. Thus to achieve their goal, Lincoln and Secretary of State Seward needed to avoid both serious military defeats and unnecessary controversies with the European powers.

Aware that the textile industry employed one-fifth of the British population directly or indirectly,

southerners assumed that British leaders would have to recognize the Confederacy. But at the beginning of the war, British mills had a 50 percent surplus of cotton on hand; later on, new sources of supply in India, Egypt, and Brazil helped to meet Britain's needs; and throughout the war, some southern cotton continued to reach Europe, despite the Confederacy's recommendation that southerners plant and ship no cotton. Refusing to be stampeded into recognition of the Confederacy, the British government kept its eye on the battlefield. France, though sympathetic to the South, was unwilling to act independently of Britain. Confederate agents were able to purchase valuable arms and supplies in Europe and obtained loans from European financiers, but they never achieved a diplomatic breakthrough.

More than once the Union strategy nearly broke down. An acute crisis occurred in 1861 when the overzealous commander of an American frigate stopped the British steamer *Trent* and removed two Confederate ambassadors sailing to Britain. They were imprisoned after being brought ashore. This action was cheered in the North, but the British protested this violation of freedom of the seas and demanded the prisoners' release. Lincoln and Seward waited until northern public opinion cooled and then released the two southerners. Then the sale to the Confederacy of warships constructed in England sparked vigorous protest from United States ambassador Charles Francis Adams. A few English-built ships, notably the *Alabama*, reached open water to serve the South. Over a period of twenty-two months, without entering a southern port (because of the Union blockade), the *Alabama* destroyed or captured more than sixty northern ships. But the British government, as a neutral power, soon barred delivery of warships such as the Laird rams, formidable vessels whose pointed prows were designed to end the blockade by battering the Union ships.

On the battlefield, the northern victory was far from won in 1864. General Nathaniel Banks's Red River campaign, designed to capture more of Louisiana and Texas, quickly fell apart, and the capture of Mobile Bay in August did not cause the fall of Mobile. Union general William Tecumseh Sherman commented that the North had to "keep the war South until they are not only ruined, exhausted, but humbled in pride and spirit."

Military authorities throughout history have agreed that deep invasion is very risky: the farther an army penetrates enemy territory, the more vulnerable its own communications and support become.



Both General Grant (left) and General Lee (right) were West Point graduates and had served in the United States Army during the Mexican War. Their bloody battles against each other in 1864 stirred northern revulsion to the war even as they brought its end in sight. National Archives.

Moreover, observed the Prussian expert Karl von Clausewitz, if the invader encountered a “truly national” resistance, his troops would be “everywhere exposed to attacks by an insurgent population.” Thus if southerners were determined enough to mount a “truly national” resistance, their defiance and the South’s vast size could make a northern victory virtually impossible.

General Grant, by now in command of all the federal armies, decided to test these conditions—and southern will—with a strategic innovation of his own: raids on a massive scale. Grant proposed to use whole armies, not just cavalry, to destroy Confederate railroads, thus ruining the enemy’s transportation and damaging the South’s economy. Abandoning their lines of support, Union troops would live off the land while laying to waste all resources useful to the military and to the civilian population of the Confederacy. After General George H. Thomas’s troops won the Battle of Chattanooga in November 1863 by ignoring orders and charging up Missionary Ridge, the heartland of the South lay open. Moving to Virginia, Grant entrusted General Sherman with 100,000 men for a raid deep into the South, toward Atlanta.

Jefferson Davis countered by positioning the army of General Joseph E. Johnston in Sherman’s path. Davis’s entire political strategy for 1864 was based on demonstrating Confederate military strength and successfully defending Atlanta. The United States presidential election of 1864 was approaching, and Davis hoped that southern resolve would lead to the defeat of Lincoln and the election of a president who would sue for peace. When General Johnston slowly but steadily fell back toward Atlanta, Davis grew anxious and sought assurances that Atlanta would be held. From a purely military point of view, Johnston maneuvered skillfully, but the president of the Confederacy could not take a purely military point of view. When Johnston provided no information and continued to drop back, Davis replaced him with the one-legged General John Hood, who knew his job was to fight. “Our all depends on that army at Atlanta,” wrote Mary Boykin Chesnut. “If that fails us, the game is up.”

For southern morale, the game was up. Hood attacked but was beaten, and Sherman’s army occupied Atlanta on September 2, 1864. The victory buoyed northern spirits and ensured Lincoln’s reelection. “There is no hope,” Mary Chesnut acknowl-

edged, and a government clerk in Richmond wrote, "Our fondly-cherished visions of peace have vanished like a mirage of the desert." Davis exhorted southerners to fight on and win new victories before the federal elections, but he had to admit that "two-thirds of our men are absent . . . most of them absent without leave." Hood's army marched north to cut Sherman's supply lines and force him to retreat, but Sherman began to march sixty thousand of his men straight to the sea, planning to live off the land and destroying Confederate resources as he went (see map).

Sherman's army was an unusually formidable force, composed almost entirely of battle-tested veterans and officers who had risen through the ranks.

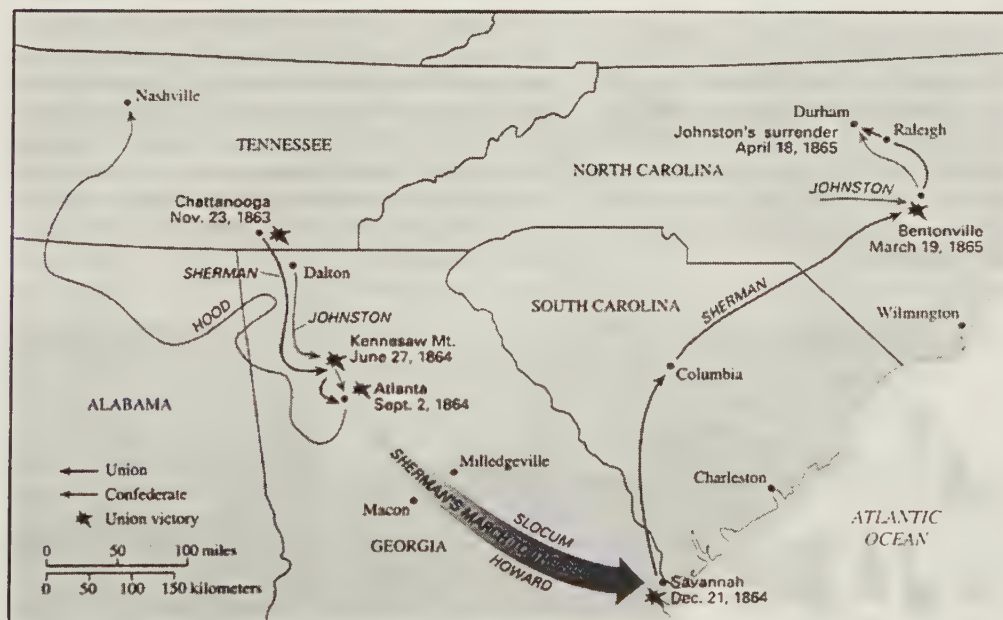
The March to the Sea

Before the march began, army doctors weeded out any men who were weak or sick. Tanned, bearded, tough, and unkempt, the remaining veterans were determined, as one put it, "to Conquer this Rebelien or Die." They believed "the South are to blame for this war" and were ready to make the South pay. Although many harbored racist attitudes, most had come to support emancipation because, as one said,

"Slavery stands in the way of putting down the rebellion." Confederate General Johnston later commented, "There has been no such army since the days of Julius Caesar."

As Sherman's men moved across Georgia, they cut a path 50 to 60 miles wide and more than 200 miles long. The totality of the destruction they caused was awesome. A Georgia woman described the "Burnt Country" this way: "The fields were trampled down and the road was lined with carcasses of horses, hogs, and cattle that the invaders, unable either to consume or to carry with them, had wantonly shot down to starve our people and prevent them from making their crops. The stench in some places was unbearable." Such devastation diminished the South's material resources and sapped its will to resist.

After reaching Savannah in December, Sherman marched his armies north into the Carolinas. To his soldiers, South Carolina was "the root of secession." They burned and destroyed as they moved through, encountering little resistance. The opposing army of General Johnston was small, but Sherman's men should have been prime targets for guerrilla raids and harassing attacks by local defense units. The absence



Sherman's March to the Sea The West proved a decisive theater at the end of the war. From Chattanooga, Union forces drove into Georgia, capturing Atlanta. Then General Sherman embarked on his march of destruction through Georgia to the coast and then northward through the Carolinas.



The War in Virginia, 1864–1865 At great cost, Grant hammered away at Lee's army until the weakened southern forces finally surrendered at Appomattox Courthouse.

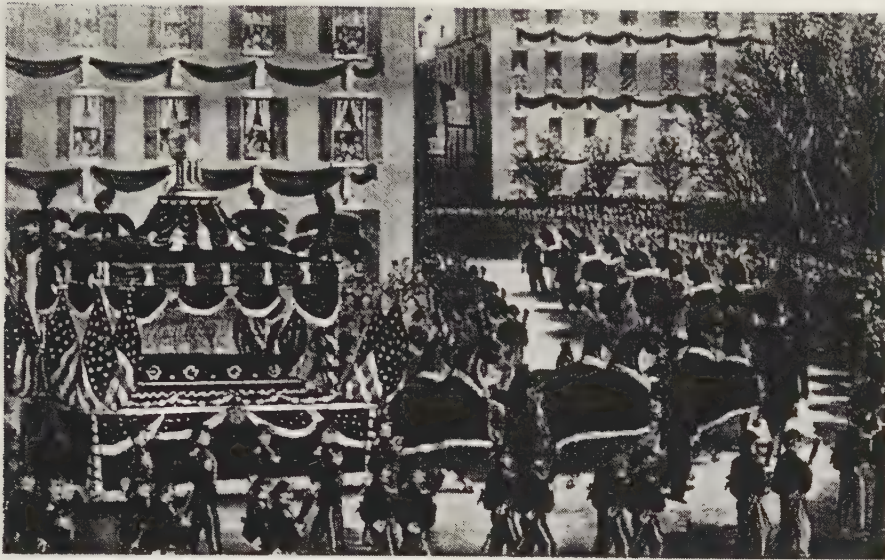
of both led South Carolina's James Chesnut, Jr., (a politician and husband of Mary Chesnut) to write that his state "was shamefully and unnecessarily lost. . . . We had time, opportunity and means to destroy him. But there was wholly wanting the energy and ability required by the occasion." The South put up no "truly national" resistance; its people were near the end of their endurance.

Sherman's march drew additional human resources to the Union cause. In Georgia alone as many as nineteen thousand slaves gladly took the opportunity to escape bondage and join the Union troops as they passed through the countryside. Others remained on the plantations to await the end of the war, either from an ingrained wariness of whites or negative experiences with federal soldiers. The destruction of food harmed slaves as well as white rebels, and many blacks lost blankets, shoes, and other valuables to their liberators. In fact, the brutality of Sherman's troops shocked these veterans of the whip. "I've seen them cut the hams off of a live pig or ox and go off leavin' the animal groanin'," recalled one man. "The master had 'em kilt then, but it was awful."

It was awful, too, in Virginia, where the preliminaries to victory proved protracted and ghastly. Throughout the spring and summer of 1864, intent on capturing Richmond, Grant hurled his troops at Lee's army in Virginia and suffered appalling losses: almost 18,000 casualties in the Battle of the Wilderness, where skeletons poked out of the shallow graves dug one year before; more than 8,000 at Spotsylvania; and 12,000 in the space of a few hours at Cold Harbor (see map). Before the last battle, Union troops pinned scraps of paper bearing their names and addresses to their backs, certain they would be mowed down as they rushed Lee's trenches. In four weeks in May and June, Grant lost as many men as were enrolled in Lee's entire army. Undaunted, Grant kept up the pressure, saying, "I propose to fight it out along this line if it takes all summer." Though costly, these battles prepared the way for eventual victory: Lee's army shrank until offensive action was no longer possible, while Grant's army kept replenishing its forces with new recruits.



At the war's end, the United States flag flew over the state capitol in Richmond, Virginia, which bore many marks of destruction. National Archives.



The death of President Lincoln caused a vast outpouring of grief in the North. As this Currier and Ives print shows, on its way to Illinois, his funeral train stopped at several cities to allow local services to be held. Anne S. K. Brown Military Collection, John Hay Library, Brown University.

The end finally came in the spring of 1865. Grant kept battering Lee, who tried but failed to break through the Union line. With the numerical superiority of Grant's army now greater than two to one, Confederate defeat was inevitable. On April 2 Lee abandoned Richmond and Petersburg. On April 9, hemmed in by Union troops, short of rations, and having fewer than thirty thousand men left, Lee surrendered at Appomattox Courthouse. Grant treated his rival with respect and paroled the defeated troops, allowing cavalrymen to keep their horses and take them home. Within weeks, Davis, who had wanted the war to continue, was captured in Georgia, and the remaining Confederate forces laid down their arms and surrendered. The war was over at last.

Heavy Losses Force Lee's Surrender

With Lee's surrender, Lincoln knew that the Union had been preserved, yet he did not live to see the war's end. On the evening of Good Friday, April 14, he accompanied his wife to Ford's Theatre in Washington to enjoy a popular comedy. There John Wilkes Booth, an embittered southern sympathizer, shot the president in the head at point-blank range. Lincoln died the next day. Twelve days later, troops tracked down and killed Booth. The Union had lost its wartime leader, and millions publicly mourned the

martyred chief executive along the route of the funeral train that took his body home to Illinois. Relief at the war's end mingled uncomfortably with a renewed sense of loss and uncertainty about the future.



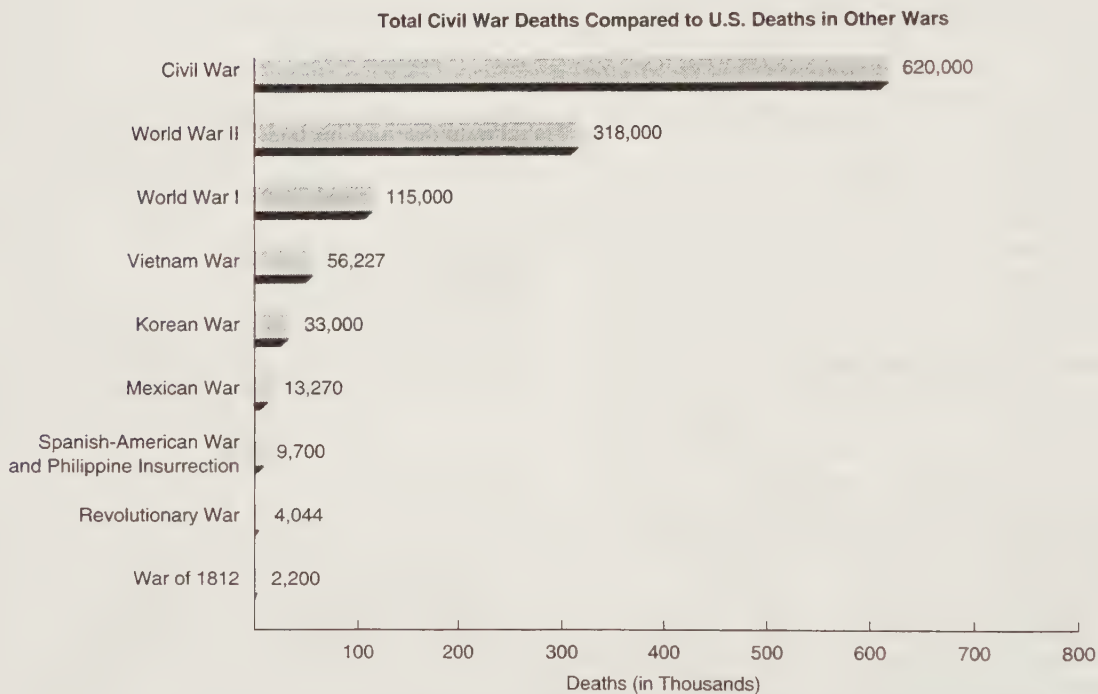
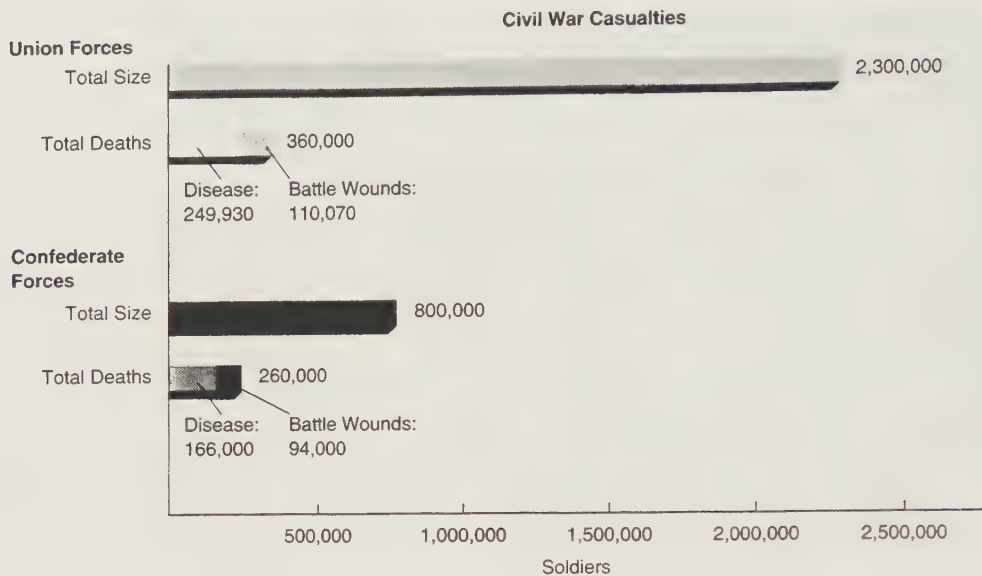
Costs and Effects

The human costs of the Civil War were enormous (see figure, page 438). The total number of military casualties on both sides exceeded 1 million—

a frightful toll for a nation of 31 million people. Approximately 360,000 Union soldiers died, 110,000 of them from wounds suffered in battle. Another 275,175 Union soldiers were wounded but survived. On the Confederate side, an estimated 260,000 lost their lives, and almost as many suffered wounds. More men died in the Civil War than in all other American wars combined until Vietnam. Fundamental disagreements that would continue to trouble the Reconstruction era had caused unprecedented loss of life.

Although precise figures on enlistments are impossible to obtain, it appears that 700,000 to 800,000 men served in the Confederate armies. Far more, possibly 2.3 million, served in the Union armies. All

Casualties



The Unprecedented Human Losses of the Civil War Month after month newspapers in every community published the names of men who had become casualties. As this graph implies, the newspapers' lists were long. Source: Shelby Foote, *The Civil War, a Narrative*, 3 vols. (1958–1974); Richard B. Morris, *Encyclopedia of American History* (1982); Archer Jones, *Civil War Command and Strategy* (1992).

these men were taken from home, family, and personal goals and had their lives disrupted in ways that were not easily repaired.

Property damage and financial costs were also enormous, though difficult to tally. United States loans and taxes during the conflict totaled almost \$3

Financial Cost of the War

billion, and interest on the war debt was \$2.8 billion. The Confederacy borrowed over \$2 billion but lost far more in the destruction of homes, crops, livestock, and other property. As an example of the wreckage that attended four years of conflict on southern soil, the number of hogs in South Carolina plummeted from 965,000 in 1860 to approximately 150,000 in 1865, leaving many families without their primary source of meat. Scholars have noted that small farmers lost just as much, proportionally, as planters whose slaves were emancipated.

In southern war zones the landscape was desolated. Soldiers seeking fuel or shelter had cut down many large stands of trees, and artillery shells had blasted many others. Over wide regions fences and crops were destroyed, houses and bridges burned, and fields abandoned and left to erode. Union troops had looted factories and put two-thirds of the South's railroad system out of service. Levees and roads had deteriorated. Visitors to the countryside were struck by how empty and impoverished it looked. Nature would repair much of the damage in time, but large investments of human skill and energy were gone.

Estimates of the total cost of the war exceed \$20 billion—five times the total expenditures of the federal government from its creation to 1861. The northern government increased its spending by 700 percent in the first full year of the war; by the last year its spending had soared to twenty times the prewar level. By 1865 the federal government accounted for over 26 percent of the gross national product.

Many of these changes were more or less permanent. In the 1880s, interest on the war debt still accounted for approximately 40 percent of the federal budget and Union soldiers' pensions for as much as 20 percent. The federal government had used its power to support manufacturing and business interests by means of tariffs, loans, and subsidies, and wartime measures left the federal government more deeply involved in the banking and transportation systems. Thus although many southerners had hoped to remove government from the economy, the war made such separation an impossibility. After the war,

federal expenditures shrank but stabilized at twice the prewar level, or at 4 percent of the gross national product.



Conclusion

The Civil War altered American society in many ways. During the war, in both North and South, women had taken on new roles, which could grow or stagnate. Industrialization and large economic enterprises played a larger role than ever before. Ordinary citizens found that their futures were increasingly tied to great organizations. Politically, the defense of national unity brought far-reaching changes in government and policy. Under Republican leadership, the federal government had expanded its power not only to preserve the Union but also to extend freedom. In a sweeping expropriation of what had been considered property, the government emancipated the slaves, and Lincoln had called for "a new birth of freedom" in America. It was unclear, however, whether the nation would use its power to protect the rights of individuals. Would the government guarantee the rights of the former slaves, whose humanity was now recognized? Extreme forms of states' rights dogma clearly were dead, but would Americans continue to favor a state-centered federalism? How would white southerners, embittered and impoverished by the war, respond to efforts to reconstruct the nation?

Closely related to these issues was a question of central importance: what would be the place of black men and women in American life? The Union victory provided a partial answer: slavery as it had existed before the war could not persist. But whether full citizenship and equal rights would take slavery's place remained unclear. Black veterans and former slaves eagerly sought an answer. They would find it during Reconstruction.

Suggestions for Further Reading

The War and the South

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Abraham Lincoln and the Union Government

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Textbook Features

Creating Your Own Study Guide

You might find that many textbooks do not include features such as lists of key words, outlines, and study questions. However, that doesn't mean readers have to make do without them. If the chapter content is challenging or wide in scope, consider creating your own study guide to help yourself master the material.

One feature of your study guide could be a list of what you believe to be the **key terms**. As you read, circle or highlight important words and phrases. Look for terms the author defines or explains. Then compile the words into a list (or create flash cards) and add their definitions. For example, the beginnings of a list of key terms for the "Transforming Fire" chapter might look like this:

- Union: *states that remained loyal to the United States of America during the Civil War*
- secession: *formal withdrawal from an alliance*
- Confederacy: *new government created by Southern states and territories, which functioned independently of the United States*
- Jefferson Davis: *president of the Confederacy*
- Yankees: *pro-Union Northerners*
- Battle of Bull Run: *first battle of the Civil War on July 21, 1861; a Confederate victory*

EXERCISE 1

In the space below (or on a separate sheet of paper), create a list of key terms and their definitions for the "War Transforms the South" section of the "Transforming Fire" chapter.

Another feature you could include in your study guide is a **visual summary** of information. You could compile timelines like the one in the "Transforming Fire" chapter entitled Important Events. You could create a chart that lists each Civil War battle with dates, numbers of casualties, and victor, or you could create a line graph of these results to help you get a visual picture of the struggle. You could create a diagram summary of all of the factors and characteristics that contributed to the Confederacy's defeat. The extra effort you put into creating such visuals will result in improved comprehension and retention of the information.

EXERCISE 2

In the space below (or on a separate sheet of paper), create a chart, line graph, or diagram described in the examples above, or create some other visual summary of information in the “Transforming Fire” chapter.

Your study guide might also include mnemonic devices to help you remember information. **Mnemonic devices** are systems that improve recall of information. They include rhymes, sayings, songs, and phrases. For example, if you need to remember all of the states that joined the Confederacy, you could list the first letter of each state:

Virginia	Tennessee
North Carolina	Alabama
South Carolina	Mississippi
Georgia	Arkansas
Florida	Louisiana
Texas	Indian Territory
	New Mexico Territory

V N S G F T T A M A L I N

Now rearrange those letters to create a phrase or word group that you can remember more easily. For example:

FAINT MTV SLANG

You could also come up with a phrase instead of rearranging the letters into words. For example, let’s say you need to remember the four slave states that did not join the Confederacy:

Missouri
Kentucky
Maryland
Delaware

You could form a phrase containing words that begin with those letters:

Don’t Make Kentucky Mad!

EXERCISE 3

In the space below, create a mnemonic device to help you remember important Civil War battles of 1863:

Chancellorsville
Gettysburg
Vicksburg
Chattanooga

Finally, you will probably want to include **questions** in your study guide. You can determine these questions by considering two things as you read:

1. Information or ideas that seem important to you
2. Information or ideas you think the instructor would call important

As you read a paragraph, pretend you are the instructor who is creating the test. What questions would you ask about the information in that paragraph? For example, for “The Tide of Battle Begins to Turn” section of the “Transforming Fire” chapter, you could create these questions:

What were three major Civil War battles in 1863?
Why was the Battle of Chancellorsville both good and bad for the Confederacy?
Why was Vicksburg important to the Confederacy?
What was Pickett’s Charge?
How did the Battle of Gettysburg change the Confederate Army?

Of course, you’ll be able to create questions more effectively after you actually take one of your instructor’s tests. But even before the test, most instructors will go over the types of questions you can expect. They sometimes even tell you how to focus your studies. This information will help you devise good study questions for yourself.

After you create your study questions, set them aside for a few days. Then try to answer them to see what you recall and what you still need to learn. You could also partner with a classmate, create questions for each other, and then exchange them to check your understanding.

EXERCISE 4

In the space below, create at least five study questions for the “Emancipation Proclamations” section of the “Transforming Fire” chapter.

Tips and Techniques

Language and Learning

When you need to learn something new, use the power of language to do it. Language is an amazing tool for helping us understand what we know and for revealing what we don’t know. Has anyone ever asked you to talk about a topic you’d thought about but never discussed before? As you searched for and said the words that expressed your thoughts or beliefs about that topic, you probably found that those thoughts and beliefs became clearer to you, too. As long as they stay only in our minds, ideas and opinions have a tendency to remain fuzzy, shadowy, and half-formed. When we communicate them to others—either orally or in writing—they assume more definite shape and form.

Therefore, when you read and study information in a textbook, you may not know for sure that you’ve grasped that information until you can talk about it or write about it.

Talking to Learn. Take advantage of opportunities to talk about what you’re learning. Engage in the classroom discussions led by your instructor, and try to answer the questions he or she poses to the class. Form study groups with your classmates, and meet regularly to discuss the course material. Note the topics you aren’t able to say much about, and spend more time reviewing those topics. You might even talk with friends and family about what you’re learning. For example, if someone you know finds history interesting, talk to him or her about your Civil War studies.

EXERCISE 5

Form a study group with a few of your current classmates and talk about what you learned by reading the “Transforming Fire” chapter.

Writing to Learn. Writing, too, requires you to find the language that helps solidify your knowledge about a subject. This writing does not have to be in the form of an assignment—such as an essay or a research paper—you submit for a grade. Informal types of writing can also be valuable learning tools. After reading a textbook section or chapter, put your book aside and try to write a summary of the information. Then reread that section to check for and fill-in any gaps in your knowledge.

Freewriting is another good way to explore and reinforce your understanding. For a set period of time, say 10 or 15 minutes, write as fast as you can about what you read, without stopping or pausing to correct or to censor anything. Don’t worry about organization or grammar or spelling. Just concentrate on the topic

itself and write down everything you can remember. This technique will reveal what you know and what you still need to learn.

EXERCISE 6

In the space below (or on a separate sheet of paper), freewrite for 10 minutes about the “Transforming Fire” chapter.

EXERCISE 7

What did this freewriting exercise reveal to you about what you learned? If you were going to be tested on the information in this chapter, what topics would you need to study more?

LIBRARY ASSIGNMENT

NAME: _____ DATE: _____ DUE: _____

WRITE DIRECTLY ON THIS PAPER

Indicate the name of at least 1 librarian with whom you connected.

1. _____ 2. _____ 3. _____

1. Using the years 1855-1870, photocopy the front page of the *New York Times* printed on the MONTH AND DAY OF YOUR BIRTH.

HINT: You will find the *New York Times* in microfilm format on the lower level of the library.

EXAMPLE: If your birthdate is May 2, 1983, you will search for a *New York Times* issue from May 2 between the years 1855-1870.

Enjoy reading an article from the front page of the *New York Times*

Ask for help. Everyone in the Guggenheim is pleasant and interested in guiding you through this task.

STAPLE ALL PHOTOCOPIES TO THIS PAPER

2. a. Find a magazine, newspaper or journal article online using one of the library general databases.

Library Home Page:

<http://www.monmouth.edu/library/library.html> /Electronic Resources/General

Databases.

- b. *Search* a topic related to your major or a course in one of the General Databases. Limit your search to "full text." *Print* the article; *read* the article carefully; *write* a short summary of the article (write in box); and *staple* your article to this sheet.



APPENDIX C

GROUP PROJECT

GROUP PROJECT PRELIMINARIES

Before you begin the 'Group Project' process, it is important to reflect on the strategies that worked well for you this semester. Perhaps, you may wish to ask yourself the following questions:

- | |
|---|
| • What strategy worked most successfully for me? |
| • Why is that strategy successful for me? |
| • When can I use that strategy again? |
| • How did I use that strategy to maximize my understanding of the text? |

When thinking about the above questions, a planful and strategic student will repeatedly use what works well. Thinking about your own thinking is very important as you approach a new course, text, or chapter. Successful students reflect on what made them successful previously and they repeat the process with the new situation. This process of self-questioning/monitoring will become automatic with practice.

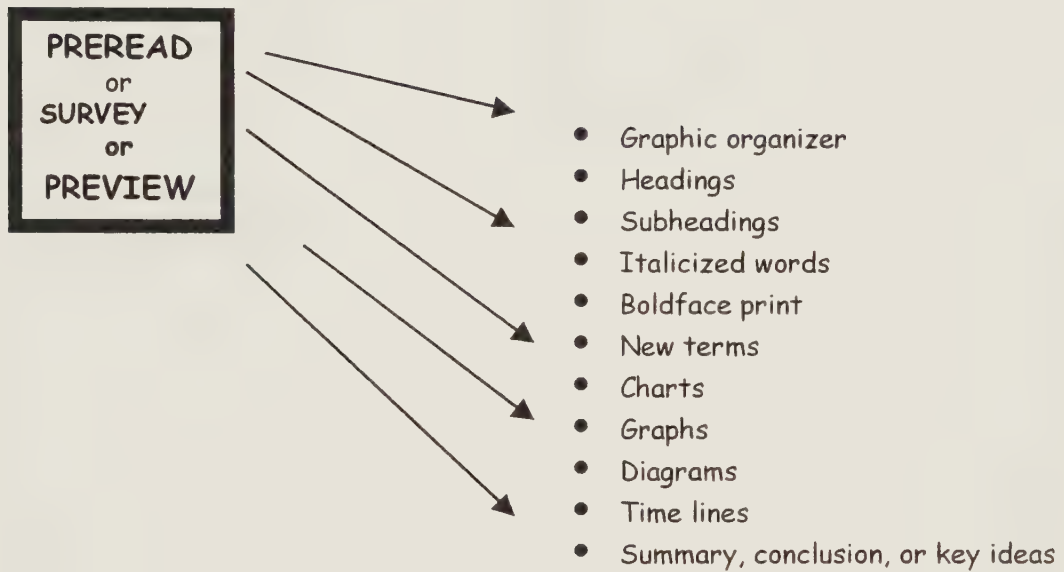
Successful students use PREREADING/SURVEYING/PREVIEWING strategies automatically. These strategies: (a) assist you as you think about what you already know about the topic (background knowledge), and (b) assist you in predicting what you will need to find out (setting a purpose for your reading).

All of this takes place before you EVER begin reading the text; thereby, facilitating efficient and strategic reading!

Mary Lee Bass, 2001

SUCCESSFUL STUDENTS ENGAGE IN THE FOLLOWING STRATEGIES:

1

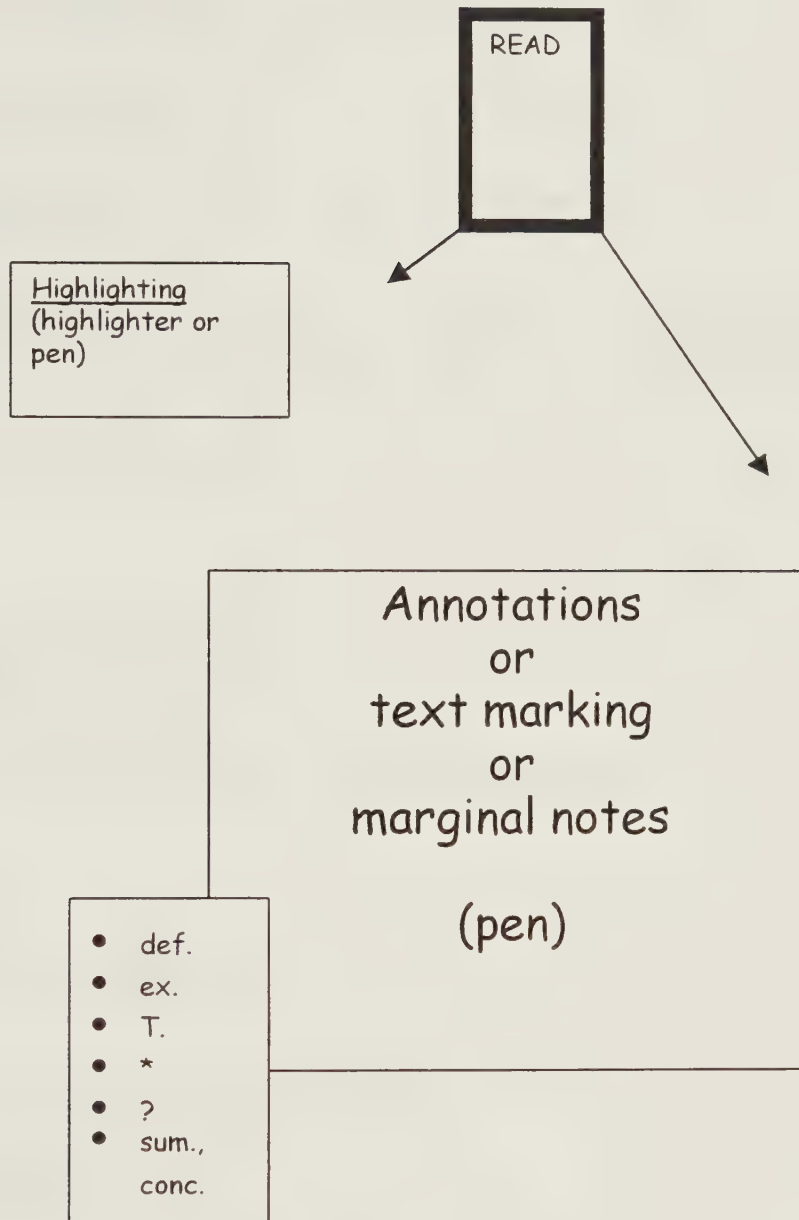


REASONS FOR PREREADING:

1. To activate background knowledge
2. To understand author's organization
3. To find out what information you will be expected to know

SUCCESSFUL STUDENTS ENGAGE IN THE FOLLOWING STRATEGIES:

2



Mary Lee Bass, 2001

GROUP PROJECT

OBJECTIVES:

- to have students experience the dynamics of group work
- to have students participate in group work using an authentic college textbook chapter
- to have students involved in using the strategies introduced and practiced during the semester

As you become involved in group work, it is important to be aware of the following guidelines. They are: cooperative behavior, respect for everyone's suggestions and thoughts, attendance, participation, and completion of your portion of the work.

Every member of the group needs to be a THINKER and a CONTRIBUTOR!

DAY 1 Week X Session 1

P - Preread/Survey/Preview

- * Remove chapter from the appendix
- * Preread entire chapter - look at the structure for this chapter

Homework:

R - Read

- * Highlight and annotate entire chapter
- * Due: next class session

DAY 2 Week X Session 2

DAY 3 Week XI Session 1

O - Organize

- * There will be 6 tasks for your group to accomplish relating to mapping, concept cards, charts, diagrams, time lines, etc.
- * Each task involves taking the material from the text and organizing it using the strategies mentioned above
- * This is all explained in detail in the 'group folder'

ALL MATERIALS MUST REMAIN IN YOUR FOLDER AND MUST BE TURNED IN TO YOUR INSTRUCTOR AT THE CLOSE OF EACH CLASS SESSION

DAY 4 Week XI Session 2

R - Review

- * You will have ample time to review all of your materials (textbook chapter notes and the 6 tasks)
- * There will be only 1 test and 1 answer sheet for each group - so you must be prepared to collaborate once again and arrive at 1 group response for each question
- * Group response to the project

Homework:

Individual Reflection Sheet

- * Due: next class session

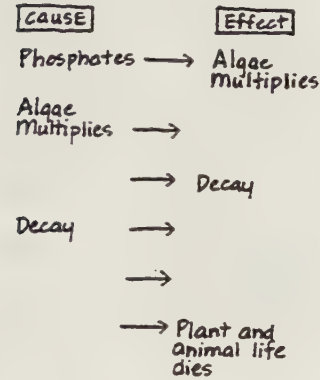
GRADING

INDIVIDUAL GRADE (100%) GROUP GRADE (100%)

Highlighting & Annotating	Efficiency of the Group
Individual Reflection Sheet	Six Tasks
	Group Test
	Group Response

Your individual grade and your group grade will be averaged together. This will be your own final group grade.

- Eutrophication



Environmental problems arise from phosphate waste water in lakes, where the phosphates act as a nutrient for microscopic plant algae. A normal amount of algae is good for a lake, because oxygen is added to the water by algae through photosynthesis. Algae also serve as food for fish, which means the algae population is kept in a natural balance. However, the phosphates from detergents cause the algae to multiply rapidly, or "bloom." The excess algae bloom dies and in time decays as the result of bacterial action. Decay reduces the oxygen content of the water, and so the aquatic animal life of the lake is affected. Thus, with the natural balance upset, the lake begins to "die." It becomes covered with algae mats and is so deficient in oxygen that only low animal forms can survive.

The process by which this occurs is called **eutrophication** (Greek, *eu-trophos*, well nourished). Eutrophication is also a natural process and takes place over thousands of years, gradually turning lakes into marshes. However, human beings hasten the natural aging process of lakes by introducing phosphates, nitrates (fertilizers), and other pollutants. The classic example is Lake Erie, which has aged as much in the past 50 years as it might have normally aged in 15,000 years.

Source: Adapted from J. Shipman et al., *An Introduction to Physical Science*, 5th Ed., Chapter 31, pp. 584-604. Copyright © 1987 by D. C. Heath and Company.

Selection From a Physical Science Text (Annotated)

DOMESTIC

Pollution from domestic sources increases as our population increases. No one wants to be labeled a polluter, particularly at home. But we all contribute, inadvertently and unknowingly. We are now finding that even with accepted disposal methods there are long-term effects of water pollution that are evident only after several years. Of course, there can be immediate health hazards with improper and unsanitary disposal practices. In the case of domestic pollution it may be said, quite truthfully, that pollution prevention begins at home. Two major considerations in domestic pollution are detergents and human organic wastes.

Detergents. A detergent in the general sense is a cleansing agent. Ordinary soap, which is a cleansing agent and detergent, is made by combining either fats or oils with alkalis such as sodium or potassium hydroxide. The complex soap molecules in water can effectively interact with grease and oil so that both are carried away with dirt in this solution. This is the detergent action, or detergency, of soap.

Few problems occur with ordinary soap in wastes, since it is normally degraded into harmless substances by bacterial action in sewage. However, the detergent action of soap is impaired by dissolved minerals in water. To accommodate the consumer, synthetic detergents were invented that react with the dissolved minerals without greatly impairing the cleansing action. But, it was quickly found that the synthetic detergents were nonbiodegradable and not removed by accepted waste treatment methods.

As a result, the synthetic detergents persisted when discharged into streams. The manufacturing of these "hard" detergents was voluntarily stopped in the mid-1960s. Through chemical modification of the molecular structures, other synthetic detergents were made that were biodegradable. After sufficient time, these "soft" detergents are completely broken down by bacterial action. There is still some concern, however, about possible yet unknown effects of the decomposition products on the environment. Detergent sales in the United States are in excess of \$1 billion.

Another more obvious pollution problem arises from **detergent builders**. These are substances added to the detergent to make its cleaning action more efficient. In some cases, detergent builders account for as much as 40% of the detergent weight. Phosphate compounds are commonly used as detergent builders. The phosphates form compounds with the Ca, Mg, and Fe ions in hard water. This prevents the ions from reacting with the soap and reducing its detergency. As expected, the waste water has high phosphate con-

2 major pollution sources come
fm. homes

1. Detergents

- detergent action (rather
than soap) is what is
harmful

- Syn. det. reacts w/ minerals
in H_2O w/o hurting
cleaning action

- HOWEVER -

- Syn. det. not biodegradable;
 \therefore not removed by treatment

Therefore, mfg. of such det.
Stopped in 60s.

- New biodegradable syn. det.
are broken down

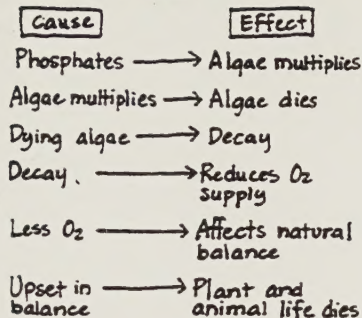
- BUT -

- there is still concern

- det. builders pose > prob. -
- def. - added to det. to
make cleaning better

(ex) phosphates - react w/
minerals in hard H_2O ;
not removed by waste
treatment

- Eutrophication



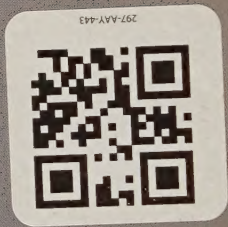
- Takes place over 1,000s of years.
- Turns lakes into marshes.

tent. Unfortunately, the phosphates are not removed by ordinary waste treatment processes.

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